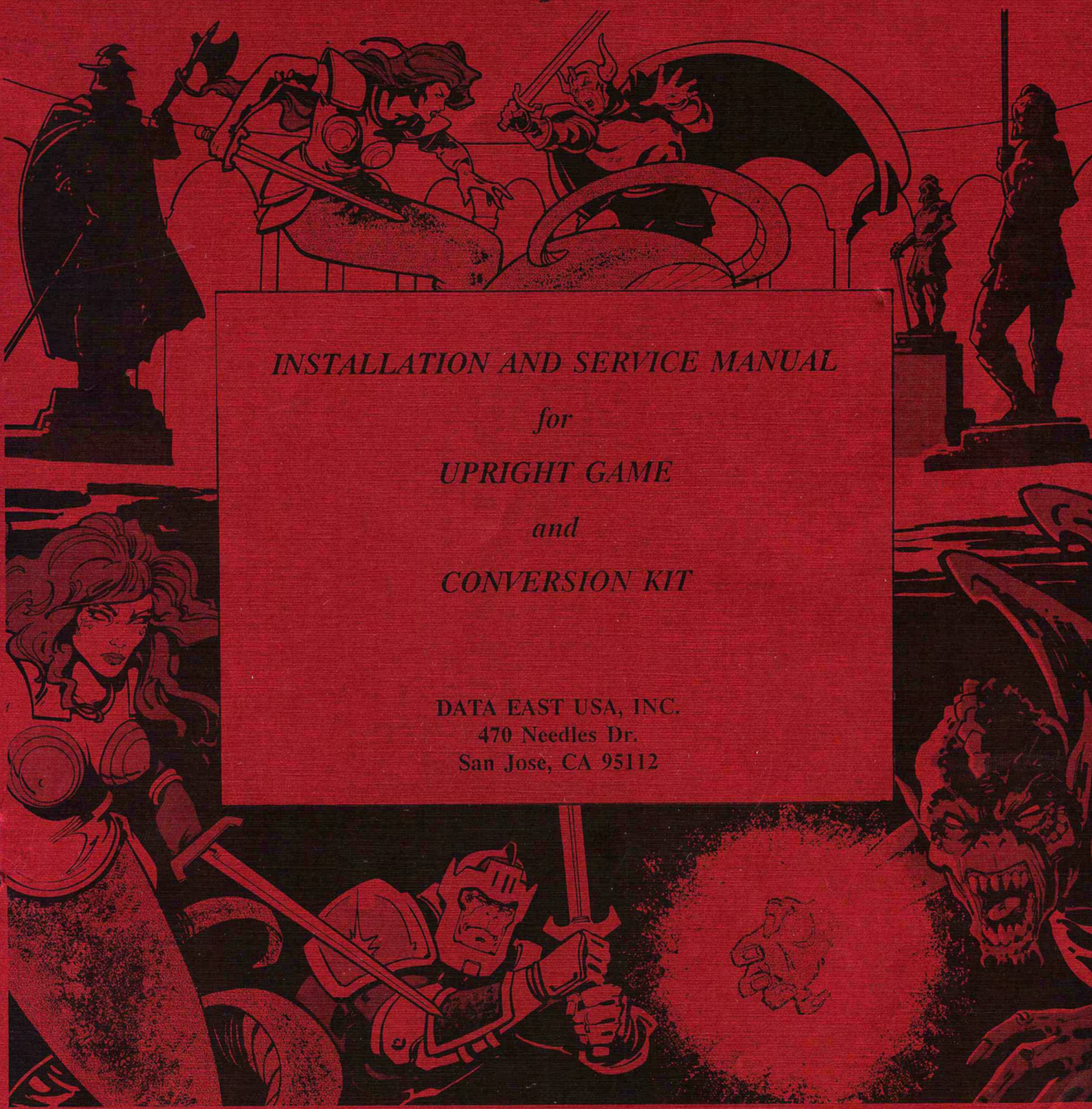
HIPPODROME



INSTALLATION AND SERVICE MANUAL

for

UPRIGHT GAME

and

CONVERSION KIT

DATA EAST USA, INC.
470 Needles Dr.
San Jose, CA 95112

780-0129-00

FCC WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, ie; in strict accordance with this instructions manual, may cause harmful interference to radio communications. This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of the FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment.

Operation of this equipment in a residential environment is likely to cause interference in which case the user, at his own expense, will be required to take whatever measures are necessary to correct the interference.

FBI WARNING

Federal law provides severe civil and criminal penalties for the unauthorized reproduction, distribution, or exhibition of copyrighted audio-visual works and video games. The Federal Bureau of Investigation investigates allegations of criminal copyright infringemant.

COPYRIGHT NOTICE

ENVIRONMENTAL DATA

This product is intended for use indoor use only, power requirements are 105-125 volts AC, 50-60 hz, and requires a 3 wire grounded outlet.

SERVICE PROCEDURES

To obtain replacement parts and technical service, contact the authorized Data East Distributor in your area. If you require referral or further technical assistance, you may contact Data East's Customer Service department during the hours of 8:00 am to 5:00 pm Pacific Time at (408) 286-7074.

AAMA WARNING

DATA EAST USA, INC., in cooperation with the American Amusement Machine Association, has installed an "AAMA PROTECT" certification label on each HIPPODROME PCB manufactured for legal sale in the United States of America.

If you are offered a HIPPODROME PCB that does not have the "AAMA PROTECT" certification label, you should suspect that the board is not legal, and should contact DATA EAST USA, INC., at (408) 286-7074, or Bob Fay of the AAMA at (703) 548-8044.

HIPPODROME™

UPRIGHT GAME
and
CONVERSION KIT

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470 Needles Dr.
San Jose, CA 95112

HIPPODROME™
UPRIGHT GAME

1. A. INSTALLATION AND SET UP

Thank you for buying a DATA EAST product. We are sure that you will enjoy many years of profitable and entertaining operation with your HIPPODROME™ game.

Your game was thoroughly tested, 'burned-in' and inspected before it was shipped. However, it may have been subjected to some rough handling, or a rough ride in a truck, since it left our factory, so please follow the steps listed below before attempting to operate the game.

Locate the door keys supplied and remove the Rear Access Door.

Check the Main Harness for loose or unplugged connectors, and check for secure mounting of the monitor, power supply, and game pcb. Stabilize the cabinet using the leg levelers in the floor of the cabinet to prevent the game from rocking.

The selectable options have been pre-set at the factory for optimum player appeal. However, to set the game up for your specific requirements, refer to the operator selectable options on Page 10 in Chapter 3, Section A of this manual.

Remove the power cord from the inside of the cabinet and insert the strain relief plate into the slot at the bottom of the rear access door opening. Plug the AC cord into a grounded 117 VAC outlet and flip the power switch to the ON position. Allow 2 to 3 minutes for the monitor to warm up and check for proper demonstration mode video on the screen. Insert the proper coinage into a coin slot and start a game. Check for proper operation of all joystick controls and switches.

1. B. *SYSTEM ADJUSTMENTS*

The Volume Control, Coin Counter, and Service Switch are located on the Service Panel. The Service Panel is located inside the Coin Door, mounted on the wall of the cabinet on the left side.

The Coin Counter increments once for every coin dropped through either coin entry slot.

HIPPODROME™ utilizes monophonic sound. A single Volume Control is used to adjust the overall loudness of the game sounds. NOTE: The volume control potentiometer on the Main PC Board is pre-set to mid-range at the factory and should not be adjusted.

The Service Switch can be used to add credits to the game without incrementing the Coin Counter.

The fuses for the AC power line and the 12 volt Supply are located on the Power Supply assembly. The fuse holders are labeled as to the proper fuse ratings. The line fuse should be 3 A slow blow, and the 12 volt fuse (used for coin door lamp circuit) should be 1 A fast blow.

The +5 vdc adjustment level control on the Power Supply's Switching Regulator is pre-set at the factory. In the event that an adjustment is required, measure the +5 volt level present at the game logic pcb with a Digital Multi-Meter while adjusting the output level of the Switching Regulator. The voltage must measure between +4.90 vdc to 5.10 vdc at the game logic pcb for proper operation.

WARNING: DANGEROUS VOLTAGE LEVELS ARE PRESENT IN AND AROUND THE MONITOR AND POWER SUPPLY ASSEMBLY. ADJUSTMENTS AND REPAIRS SHOULD BE ATTEMPTED ONLY BY QUALIFIED ELECTRONIC TECHNICIANS.

1. C. REPLACEMENT PARTS LISTS

The following lists indicate the major replaceable parts for your HIPPODROME™ Upright Game, Control Panel Assembly, Service Panel Assembly and Power Supply Assembly. When ordering replacement parts, please be sure to provide both the complete description and part number.

P/N 500-0039-00 Upright Game

Part Number	Description	Remarks
031-0005-00	Speaker, 5" deluxe	
365-0013-00	Cabinet Assy, 1US34-style	gray (45 deg)
380-0002-00	Bezel, Monitor, black	
510-0002-03	Power Supply Assy	5v-11a, 12v-1a
510-0004-00	Coin Door Assy, 2 slot	
510-0065-00	Monitor, Universal H/V	
510-0151-00	PCB Set, Hippodrome	
510-0155-00	Control Panel Assy, Hippodrome	
515-0029-02	Panel Assy, Service	
535-0078-00	Retainer, Plex, Marquee	
660-0001-01	Plex, Clear, 23.75 X 23.75	
660-0001-07	Plex, Clear, 26.06 X 7.6 X .125	(for marquee)
780-0129-00	Manual, Service & Operation, Hippodrome	
810-0040-00	Underlay, Monitor, Hippodrome	
820-0040-00	Decal, Side, Generic 5.13.87	Blue
830-0045-00	Overlay, Marquee, Hippodrome	(for marquee plex)

1. C. REPLACEMENT PARTS LISTS (continued)

P/N 510-0155-00 Control Panel Assembly

Part Number	Description
180-0024-00	Pushbutton Assy, w/microswitch, Black
180-0024-02	Pushbutton Assy, w/microswitch, Red
180-0024-04	Pushbutton Assy, w/microswitch, Yellow
406-0180-02	Tag, Pushbutton ID, "2 Players"
406-0180-05	Tag, Pushbutton ID "1 Player" (upside down)
406-0180-07	Tag, Pushbutton ID, "Jump"
406-0180-16	Tag, Pushbutton ID, "Attack"
450-0014-01	Joystick, Happ Ctrl, 8 way, w/Microswitches
535-0061-00	Control Panel, Bare
800-0030-00	Overlay, Control Panel, Generic, Blue

P/N 515-0029-02 SERVICE PANEL ASSEMBLY

Part Number	Description	Comments
090-0002-00	Coin Counter, 12 volt	w/internal diode
123-0008-11	Potentiometer, 100 Ω, 4 watt	Volume Control
180-0024-xx	Pushbutton Assy, w/Micro switch	(any color will do)
535-0084-00	Bracket, Service Panel	

P/N 510-0002-03 POWER SUPPLY ASSEMBLY

Part Number	Description	Comments
001-0012-00	Switching Regulator	+5 V @ 11A, 12V @ 2A
010-0001-00	Transformer, Isolation	1 A (min) @ 115 VAC
150-0006-00	Filter, Noise	Delta # 10DKAG5
200-0002-00	Fuse, 1 A Fast Blow	for Coin Door Lamps
200-0011-00	Fuse, 3 A Slo Blow	115 VAC Line Fuse
515-0002-01	Power Cord Assy	w/strain relief plate
660-0003-00	Fish Paper	(safety cover)

HIPPODROME™
CONVERSION KIT

2. A. SPECIFIC REQUIREMENTS

Thank you for purchasing a DATA EAST game. We hope that it will give you many years of productive enjoyment. Your HIPPODROME™ game conversion kit is intended to be installed into an existing video game cabinet, and comes with all the necessary components to make the converted unit look and play like a new, dedicated game.

THE GAME TO BE CONVERTED MUST MEET THE FOLLOWING REQUIREMENTS

MONITOR:	Horizontal, RGB, Negative Composit Sync Input
POWER SUPPLY:	+ 5VDC @ 10 amp, +12VDC @ 1 amp

2. B. REPLACEMENT PARTS LIST

The following items are provided with your HIPPODROME™ generic kit. When ordering replacement parts, please be sure to provide the complete description and part number.

Part Number	Description	Remarks
036-0158-02	Hrns, JAMMA - GENERIC KIT	
180-0024-00	Pushbutton Assy, w/microsw, Black	
180-0024-02	Pushbutton Assy, w/microsw, Red	
180-0024-04	Pushbutton Assy, w/microsw, Yellow,	
406-0003-00	Label, FCC Warning	
406-0085-00	Label Set, Pushbutton ID	
450-0014-01	Joystick, w/Microswitches	Happ Contrls
510-0151-00	PCB set, Hippodrome	
660-0001-00	Plex, Clear, 23.75 X 7.6	(for control panel)
660-0001-02	Plex, Clear, 24 X 9 X .125	(for marquee)
780-0129-00	Manual, Inst., Hippodrome	
800-0030-00	Overlay, Ctrl Pnl, Generic	blue DATA EAST
810-0040-00	Underlay, Mon. Hippodrome	
820-0040-00	Decal, Side, Generic	blue DATA EAST
830-0045-00	Overlay, Maquee, Hippodrome	

2. C. *INSTALLATION INSTRUCTIONS*

When selecting a game to convert, make sure that the Power Supply, the Monitor, and the Coin Acceptors are functional. There is nothing more frustrating than installing a conversion kit and having it not operate due to a faulty monitor or power supply. You should not expect the new logic PCB to be defective. It has been thoroughly tested and 'burned-in' at the factory.

It is mandatory that the cabinet be wired to conform with all National and Local electric codes before the conversion is attempted. The primary power input section must have adequate noise filtering on the AC line to prevent undesirable conducted radio frequency interference (RFI). "Adequate" is defined as a filter with both common mode and differential mode filtering and a minimum current capacity of 2.5 Amp.

The Federal Communications Commission (FCC), and other regulatory agencies, require that every video game be clearly labeled with the Name and Address of the Original Manufacturer, Date of Manufacture (or Serial Number), Power requirements, Suitability for indoor or outdoor use, and the Model number of the unit. DO NOT DESTROY OR DEFACE THE ORIGINAL GAME ID TAG. In addition, the FCC requires that, after conversion, the unit must be labeled with a suitable warning stating that radio frequency interference may result from use in a residential area. An acceptable label is included with this kit.

IT IS THE RESPONSIBILITY OF THE PERSON INSTALLING THIS KIT TO COMPLY WITH ALL LABELING REQUIREMENTS!

2. C. $_{1.}$ *TAKING IT APART*

Performing a few simple tasks when preparing a game to be converted can save you much time and effort when you are installing the conversion kit.

Find the Wiring Diagram of the game to be converted. You will need to identify the required DC power supply output wires and the monitor video and sync wires. Note the color coding of these wires, or better yet, label them as to their function. This kit contains a new Main Harness, but you will need to splice it into the existing power supply and video wiring.

Remove the existing game harness parts that will not be used in this conversion. NOTE: You are modifying only the secondary (DC from power supply) and I/O (video, speaker, and controls) sections of the wiring. DO NOT MODIFY OR REMOVE THE PRIMARY AC WIRING. The original manufacturer should have designed and built it to comply with Local and National Electrical Codes and FCC regulations. It must not be altered.

2. C. 1. TAKING IT APART (continued)

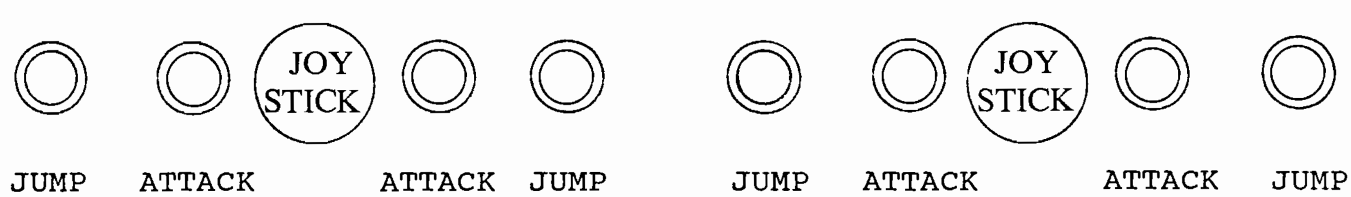
Remove the original game pcb from the cabinet. Remove all exterior decals, and repair any cabinet damage. Repaint the cabinet if necessary. Remove the monitor plex (or glass). If your plex has silkscreened art work on it, you will need to strip it off, or replace it with a new piece cut to the same size. Using the old Monitor Plex as a template, cut the Monitor Underlay card, supplied with this kit, to the same size as the old plex. NOTE: Be certain that the opening in the Underlay Card lines up with the monitor screen.

Remove the Marquee Plex from the game and use it as a template to cut the new Marquee Plex down to the correct size. Remove the control panel from the game and remove all controls and graphics from it. Drill and/or punch any required new holes for the control panel. HIPPODROME™ is an interactive, two player game (player vs. player, or player vs. computer), and requires two joy sticks. Each player also requires a minimum of two "shoot" buttons, although four are recommended (to allow either player to 'shoot' either left handed or right handed). See the diagram below for a suggested control panel layout. If you are going to cover the control panel with clear plex, you should carefully cut it to fit the control panel at this time. Thoroughly clean the control panel so that the new control panel overlay will adhere to it aggressively.

2. C. 2. PUTTING IT TOGETHER

Install the Control Panel Overlay by peeling off the paper backing and carefully laying the overly down on the panel. Smooth it out starting in the center and working your way out to the edges, removing all of the trapped air pockets. If possible, cut the edges of the overlay oversize and fold the excess under the panel. Cut out the button and joy stick holes. Install the BUTTON ID labels supplied with the kit.

FIGURE 1 - Suggested Control Panel Layout



2. C. 2. PUTTING IT TOGETHER (continued)

You may wish to cover the control panel overlay and button ID labels with clear plex at this time. Install the new buttons and joy stick at this time. Refer to Figure 1 on the previous page for recommended control layout.

GAME PCB: Mount the Game PCB in a convenient location in the cabinet, using the mounting feet and hardware supplied with the pcb.

MAIN HARNESS: The generic, main harness provided with this kit has a standard, 56 pin JAMMA connector. All required RFI filtering is incorporated on the PC Board. No external filtering is required. The Game pcb has a 56 pin, JAMMA connector. Refer to Figure 2, on page 11 for information pertaining to signals and functions as they are found on the game pcb edge connector.

POWER SUPPLY WIRING: Separate the DC power wires and route them through the cabinet to the Power Supply. Try to keep the length of these wires to a minimum for best results.

NOTE: USE A MINIMUM OF TWO (2) WIRES <u>EACH</u> FOR THE +5 VOLTS AND THE GROUND LINES BETWEEN THE POWER SUPPLY AND THE PCB. Terminate these wires at the power supply as required.

NOTE: IMPROPER WIRING WILL DAMAGE THE PCB SET AND VOID THE WARRANTY!

PLAYER CONTROL WIRING: Route the push button and joy stick wires up to their proper destinations, cut to length, and terminate as required.

MONITOR WIRING: The game outputs are Positive for the Red, Green and Blue signals, and Negative Composite Sync. If your monitor has separate Horizontal and Vertical sync inputs, hook the Composite sync to the negative Horizontal input. This method will work on most monitors. However, some <u>Electrohome</u> models require that the Composite sync signal be hooked up to both the negative Horizontal and Vertical inputs. Contact your distributor for more information if you are uncertain as to how to hook up the monitor wires.

COIN DOOR: The coin counter(s) may be the 12 volt or the 6 volt type, as the game pcb utilizes an open collector drive circuit. Hook one coin counter wire to the required, positive voltage and the other wire to the coin counter signal wire from the main harness edge connector. Refer to the standard connection diagrams on page 12.

2. C. 2. PUTTING IT TOGETHER (continued)

GRAPHICS: The monitor underlay card is pre-printed with game instructions. Install the underlay card under a clean, clear plex or glass. Check any marquee lamps for proper operation. Replace any burned out lamps. The HIPPODROME™ marquee overlay must be installed on a piece of clear plex. Before you do that, use the old plex as a guide for cutting the 24 x 9" clear plex (provided with this kit) to the proper size. Next, remove the protective coverings from the clear plex, and carefully clean it with a good, anti-static cleaner to remove any and all specks of dust, etc, that may have been attracted to it. Then remove the paper backing from the marquee overlay, and affix it to the clear marquee plex. Make sure that the copyright notice will not be hidden by any plex retainers when installed. Smooth out any and all bubbles. Install the two DATA EAST side decals.

IMPORTANT! Install the "FCC Warning" label to the upper rear of the cabinet.

THE BIG TEST!

Remove the Main Harness connector from the game pcb. Apply power. Measure the +5 volts at the edge connector of Main Harness (at the point where it would connect to the game pcb). Adjust to +5.15 VDC using a Digital volt meter. Measure the +12 volts and the -5 volts (if any) to ensure that they are connected properly and are on the correct terminals. TURN THE POWER OFF! Now reconnect the Main Harness connector to the game pcb, and apply power once again. The attract mode video should appear on the screen. Adjust the picture size and colors on the monitor to get the optimum appearance. Adjust the Sync and Hold controls on the monitor for a stable picture. Coin it up and give it a try! Test all the controls and check the sound for proper operation.

CONGRATULATIONS! You have successfully installed your DATA EAST conversion kit. We hope that it gives you may years of successful operation.

3. A. OPERATOR SELECTABLE OPTIONS

The HIPPODROME™ game allows for operator adjustable pricing, number of lives, difficulty, etc. These are accessed by the two 8 position dipswitches located on the main logic pcb. Tables 1 and 2 outline the available options.

TABLE 1 - Dipswitch 1

		1	2	3	4	5	6	7	8
Game Charge (Right) COIN 1	1 coin = 1 credit 1 coin = 2 credit 2 coin = 1 credit 3 coin = 1 credit	OFF ON OFF ON	OFF OFF ON ON			ALWAYS OFF			ALWAYS OFF
Game Charge (Left) COIN 2	1 coin = 1 credit 1 coin = 2 credit 2 coin = 1 credit 3 coin = 1 credit			OFF ON OFF ON	OFF OFF ON ON				
Attract Mode	Yes: No:						OFF ON		
Flip Screen?	Normal:							OFF ON	

TABLE 2 - Dipswitch 2

		1	2	3	4	5	6	7	8
Number of lives	2 Lives: 3 Lives: 1 Life: 5 Lives:	OFF ON OFF ON	OFF OFF ON ON						ALWAYS OFF
Game Difficulty	NORMAL: EASY: HARD: HARDEST:			OFF ON OFF ON	OFF OFF ON ON				
Power Level (player & enemy)	MEDIUM: LOW: VERY LOW: HIGH:					OFF ON OFF ON	OFF OFF ON ON		
Enemies Power Decrease when game is continued	2 dots: 3 dots:							OFF ON	

3. B. PCB EDGE CONNECTOR PIN-OUTS

TABLE 2 - JAMMA Connector

WIRE COLOR	SOLDER SIDE	PIN#	PIN#	PARTS SIDE	WIRE COLOR
BK	GROUND	A1	B1	GROUND	BK
BK	GROUND	A2	B2	GROUND	BK
RD	+5 VOLTS	A3	B3	+5 VOLTS	RD
RD	+5 VOLTS	A4	B4	+5 VOLTS	RD
BL	-5 VOLTS	A5	B5	-5 VOLTS	BL
OR	+12 VOLTS	A6	B6	+12 VOLTS	OR
	BLOCKING KEY	A7	B7	BLOCKING KEY	
VI	COIN COUNTER 2	A8	B8	COIN COUNTER 1	SL
		A9	B9		
WH/BK	SPEAKER (-)	A10	B10	SPEAKER (+)	BK/WH
GN		A11	B11		
GR	VIDEO-GREEN	A12	B12	VIDEO-RED	RD
WH	VIDEO-SYNC	A13	B13	VIDEO-BLUE	BL
YL	SERVICE SW.	A14	B14	VIDEO GROUND	BK
		A15	B15	TEST SW.	* BK/GN
RD	COIN SWITCH 2	A16	B16	COIN SWITCH 1	GN
RD/WH	2P START	A17	B17	1P START	BN/WH
YL/WH	2P UP	A18	B18	1P UP	YL
GN/WH	2P DOWN	A19	B19	1P DOWN	GN
OR/WH	2P LEFT	A20	B20	1P LEFT	OR
RD/WH	2P RIGHT	A21	B21	1P RIGHT	RD
BL/WH	2P SHOOT	A22	B22	1P SHOOT	BL
VI/WH	2P JUMP	A23	B23	1P JUMP	VI
PK/WH	NOT USED	A24	B24	NOT USED	PK
		A25	B25		
		A26	B26		
BK	GROUND	A27	B27	GROUND	BK
BK	GROUND	A28	B28	GROUND	BK

3. C. STANDARD CONNECTION DIAGRAMS

FIGURE 2 - Coin Counters & Coin Switches

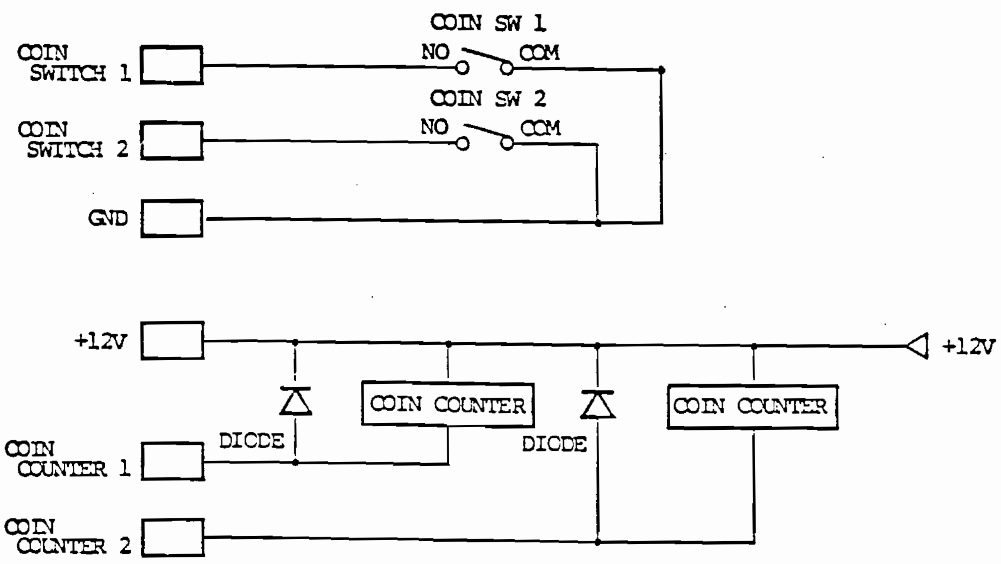
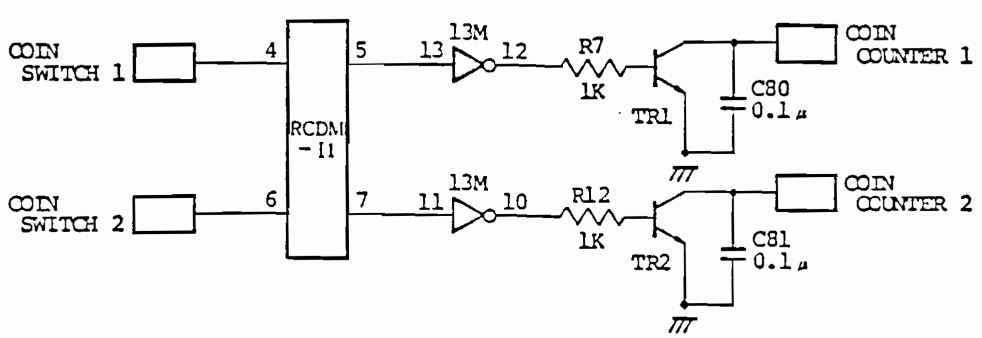


FIGURE 3 - Coin Counter/Coin Switch Circuit

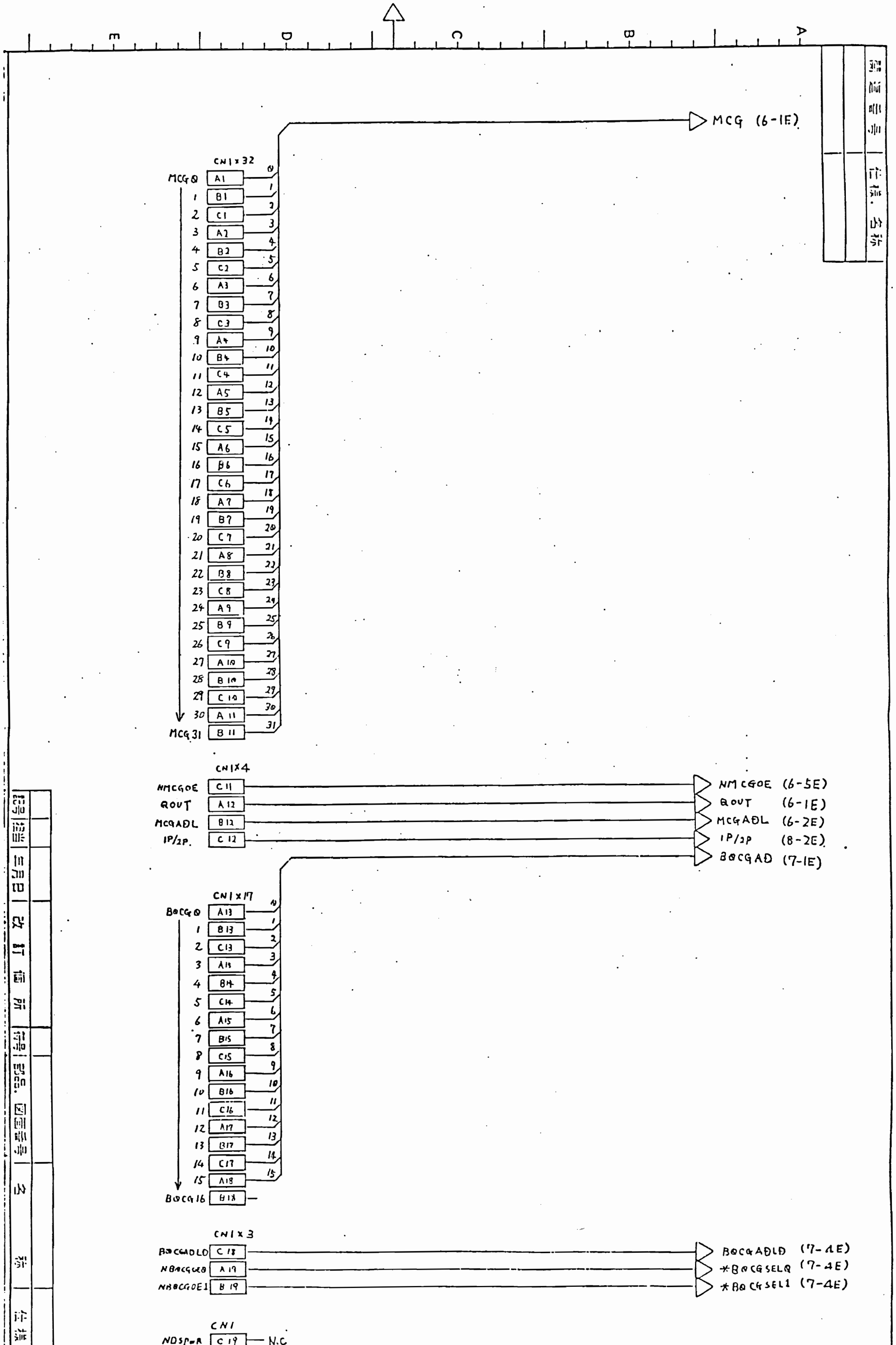


HIPPODROME™

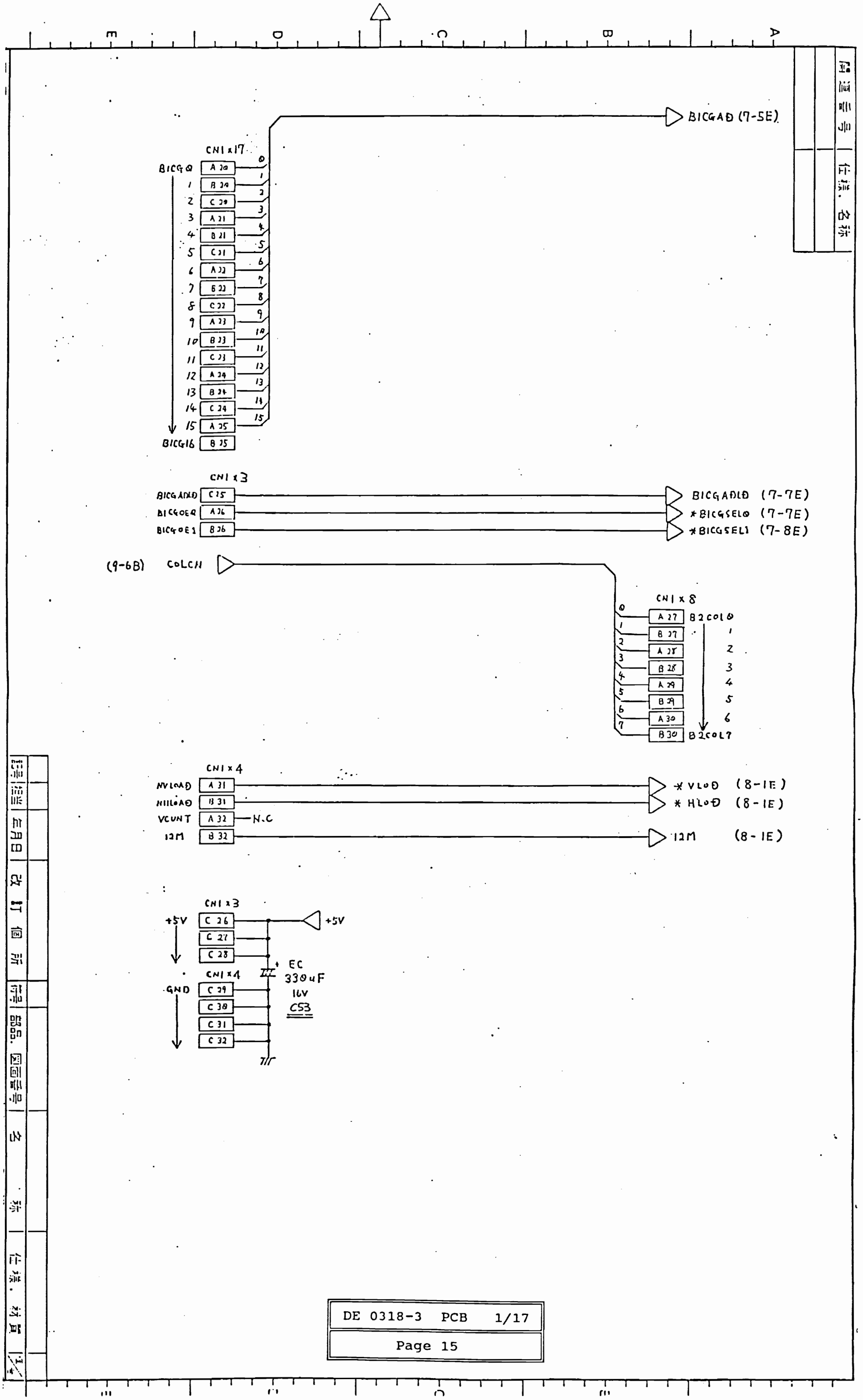
Schematic Diagrams

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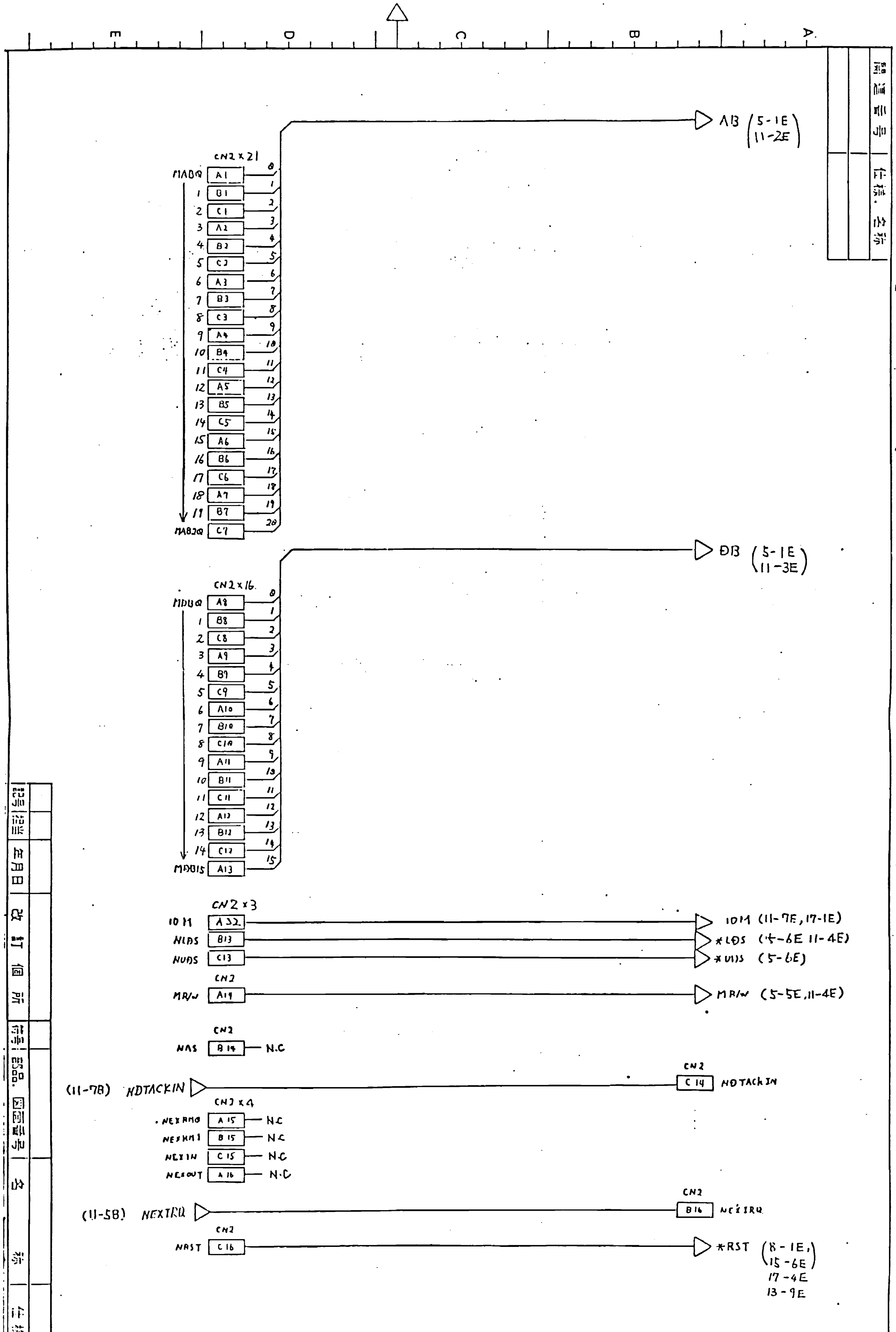
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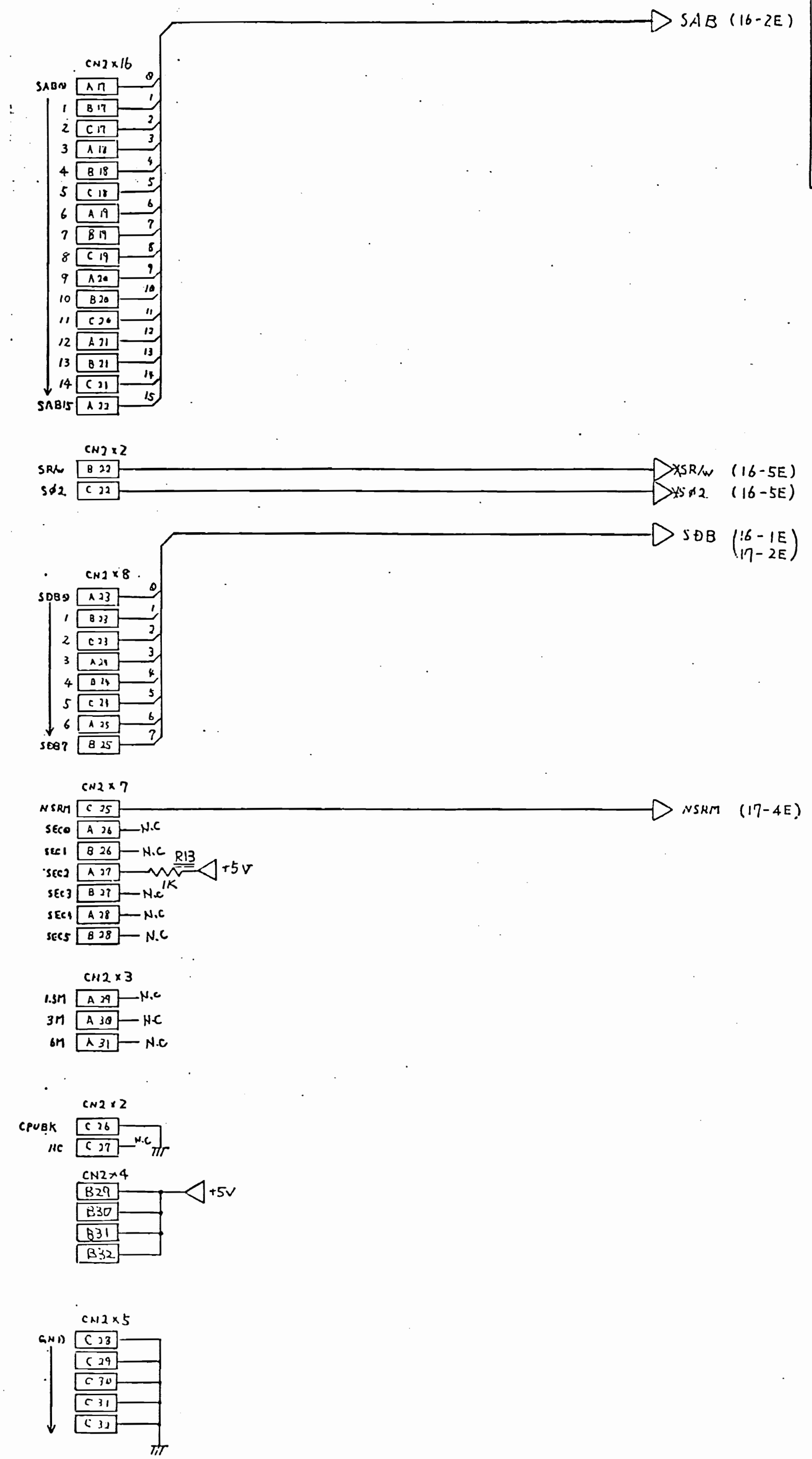
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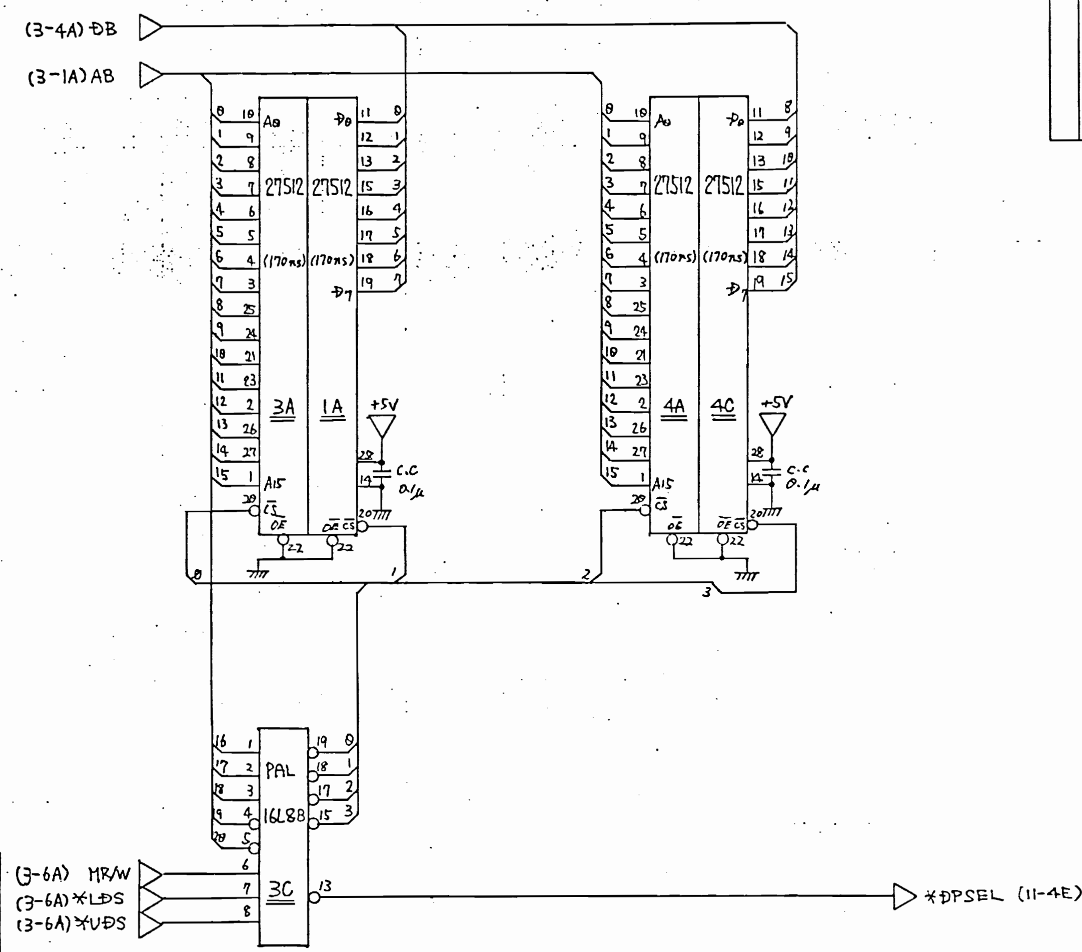


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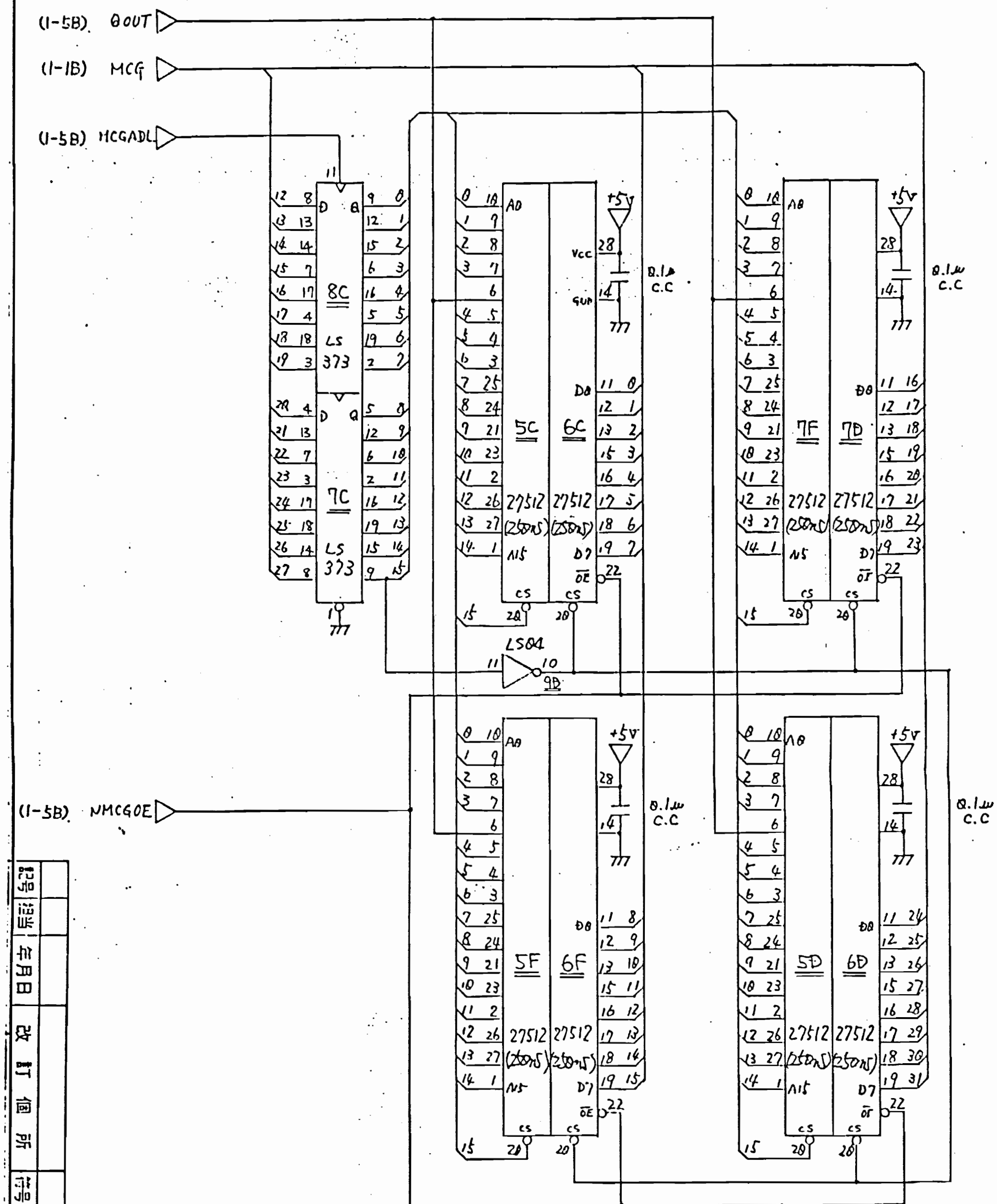
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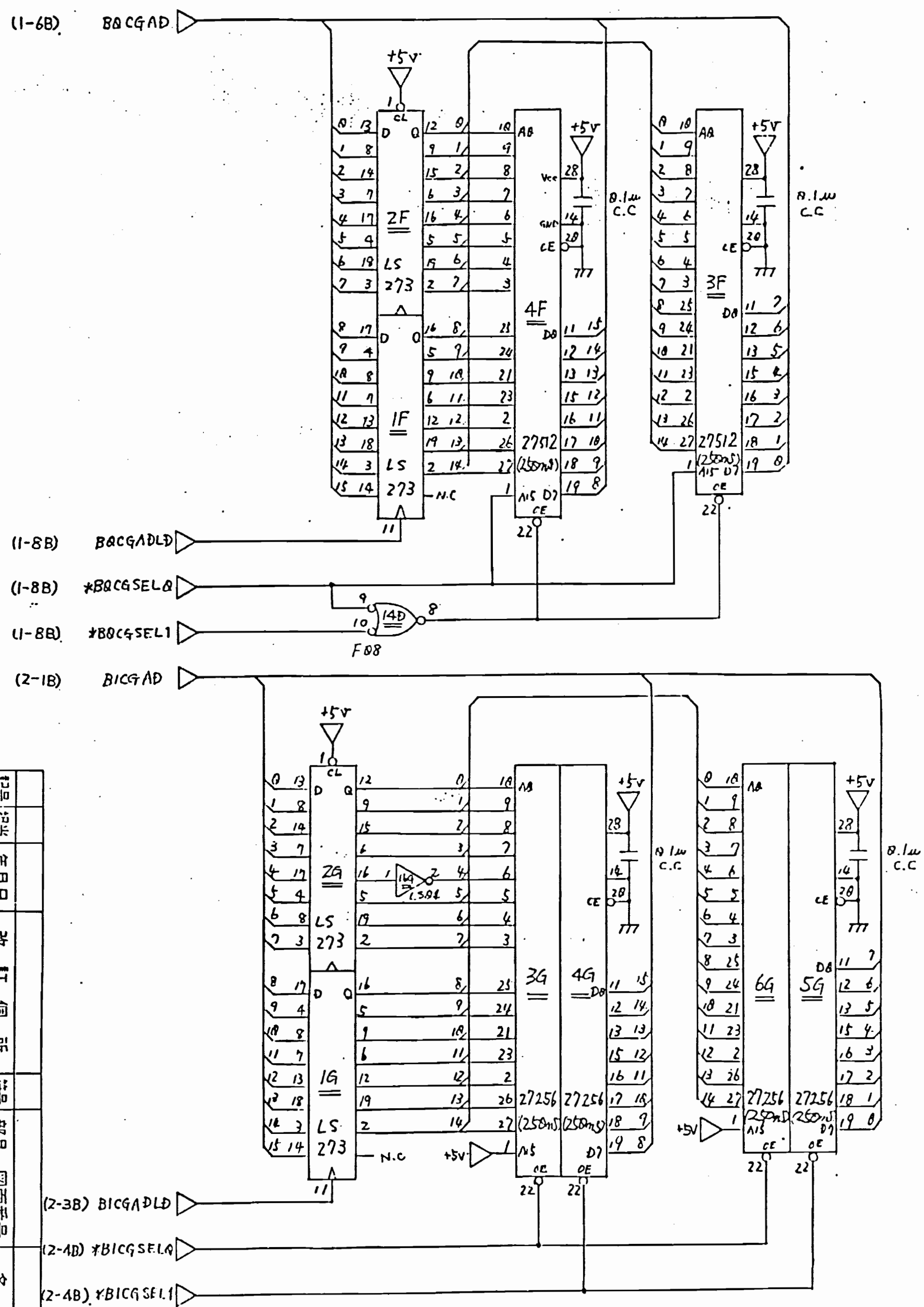
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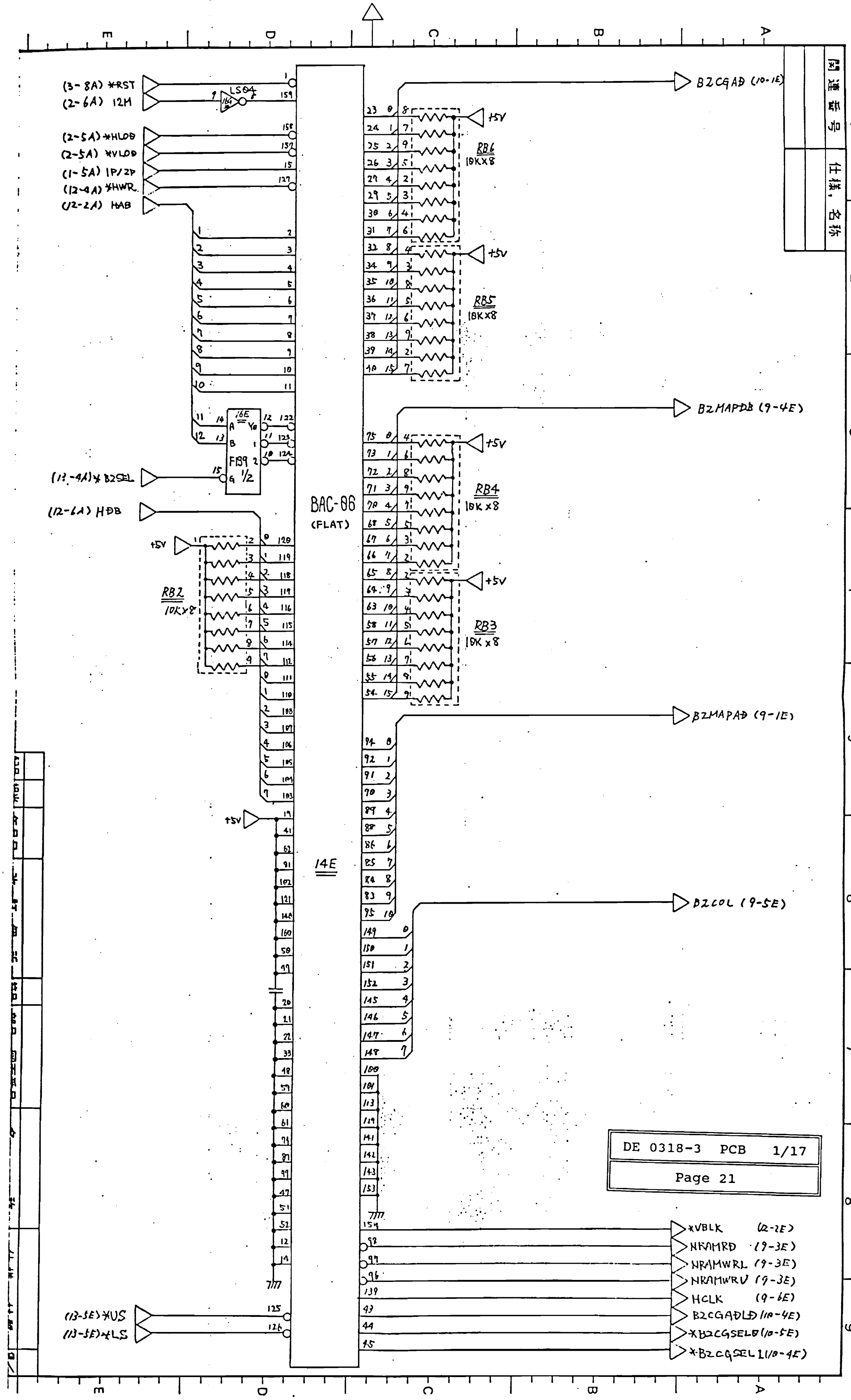
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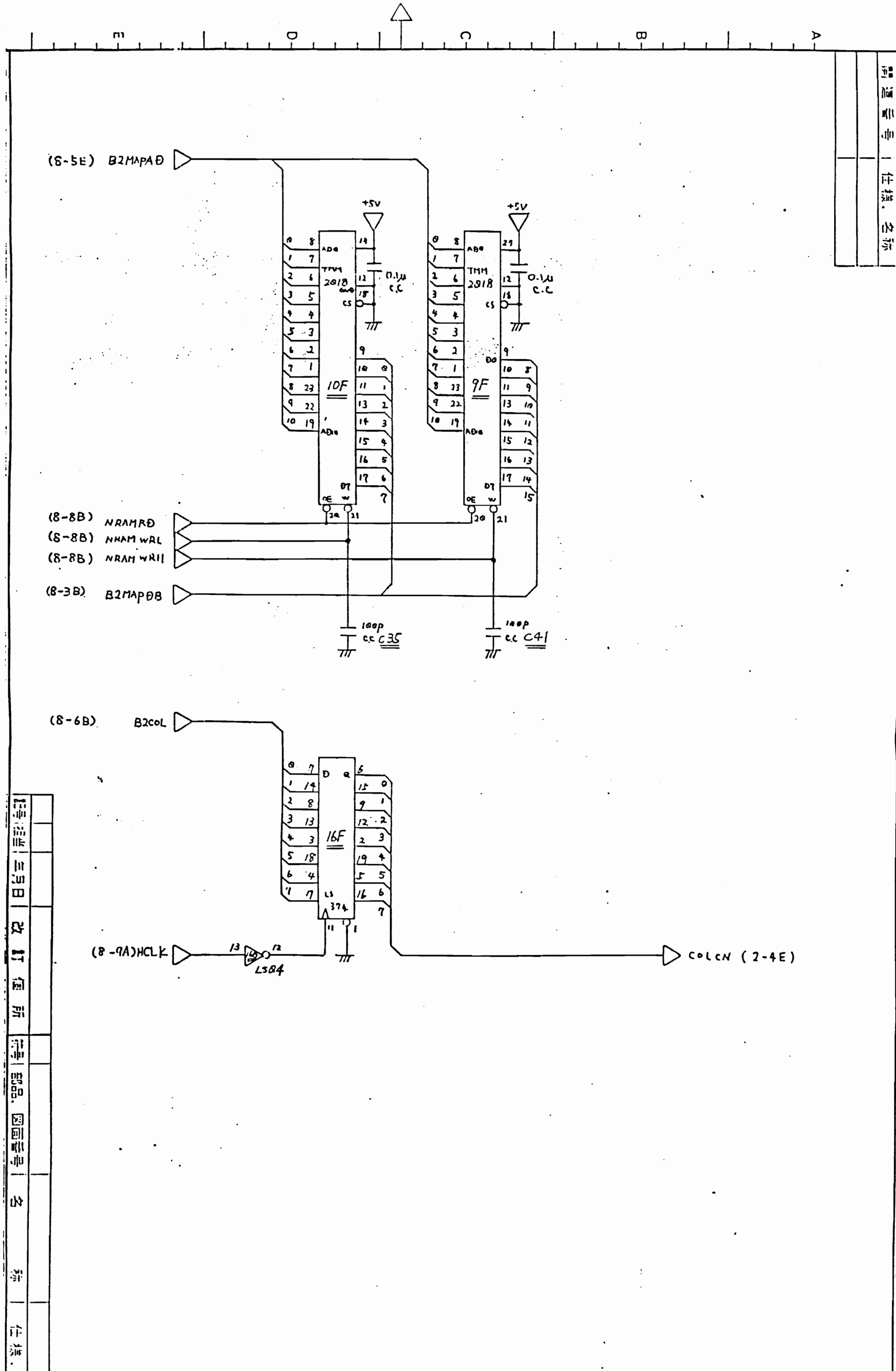
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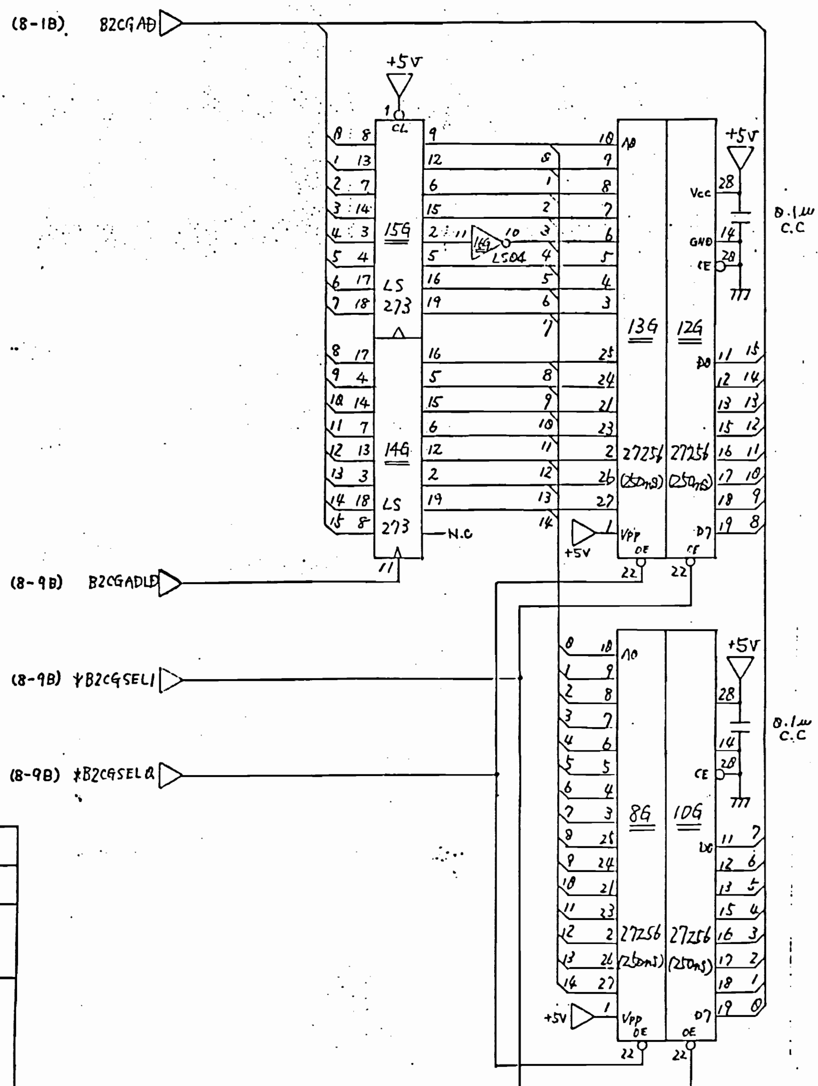


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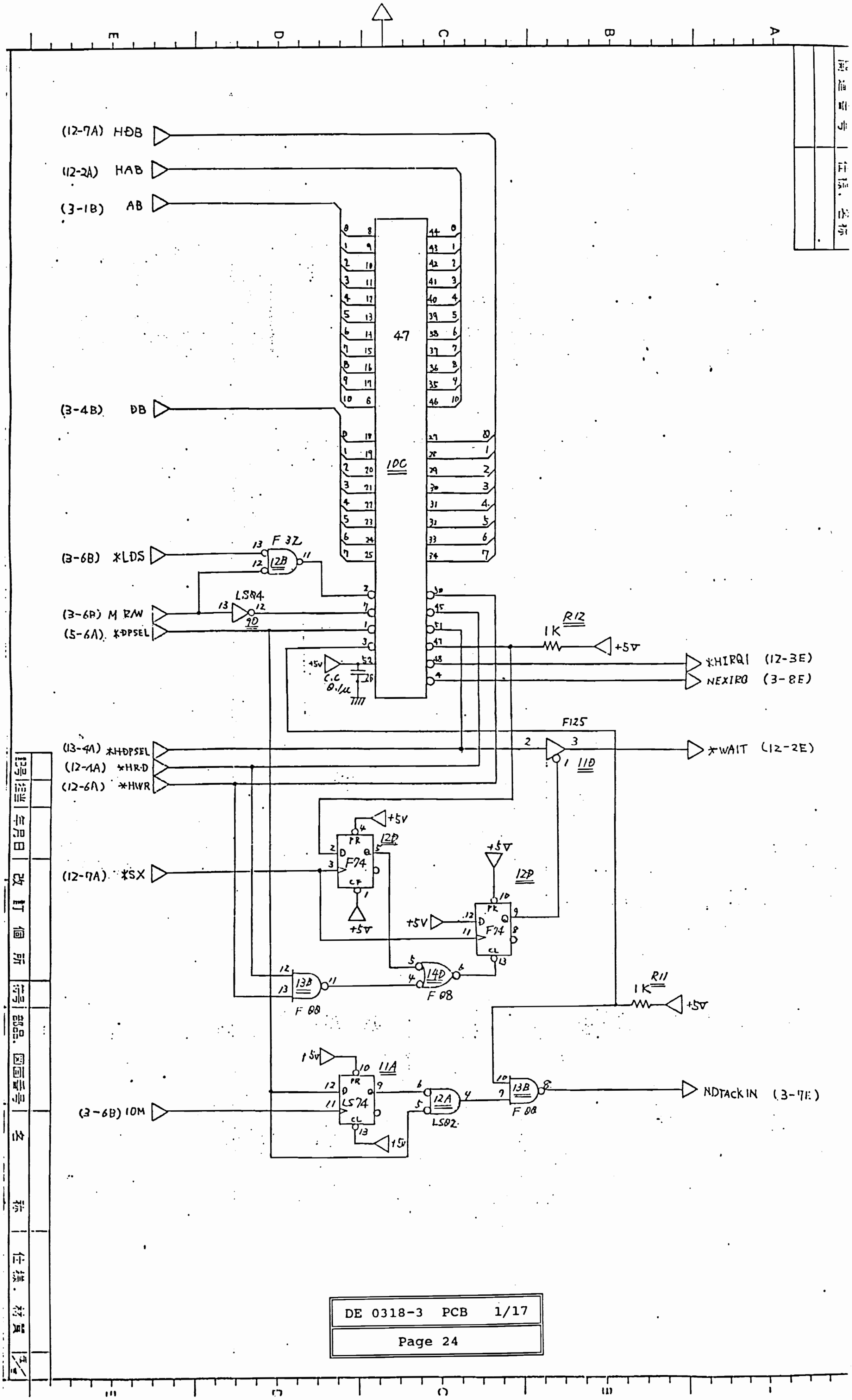

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(2-6A) 12M
LS04
(2-5A) *HLDD
(2-5A) *VLDD
(1-5A) 1P/2P
(12-4A) *HWR
(12-2A) HAB
16E
F139
1/2
(12-4A) *B2SEL
(12-6A) HDB
+5V
RB2
10K×8
BAC-06
(FLAT)
14E
B2CGAD (10-1E)
RB6
10K×8
RB5
10K×8
B2MAPDB (9-4E)
RB4
10K×8
RB3
10K×8
B2MAPAD (9-1E)
B2COL (9-5E)
*VBLK (2-2E)
NRAMRD (9-3E)
NRAMWRL (9-3E)
NRAMWRU (9-3E)
HCLK (9-6E)
B2CGADLD (10-4E)
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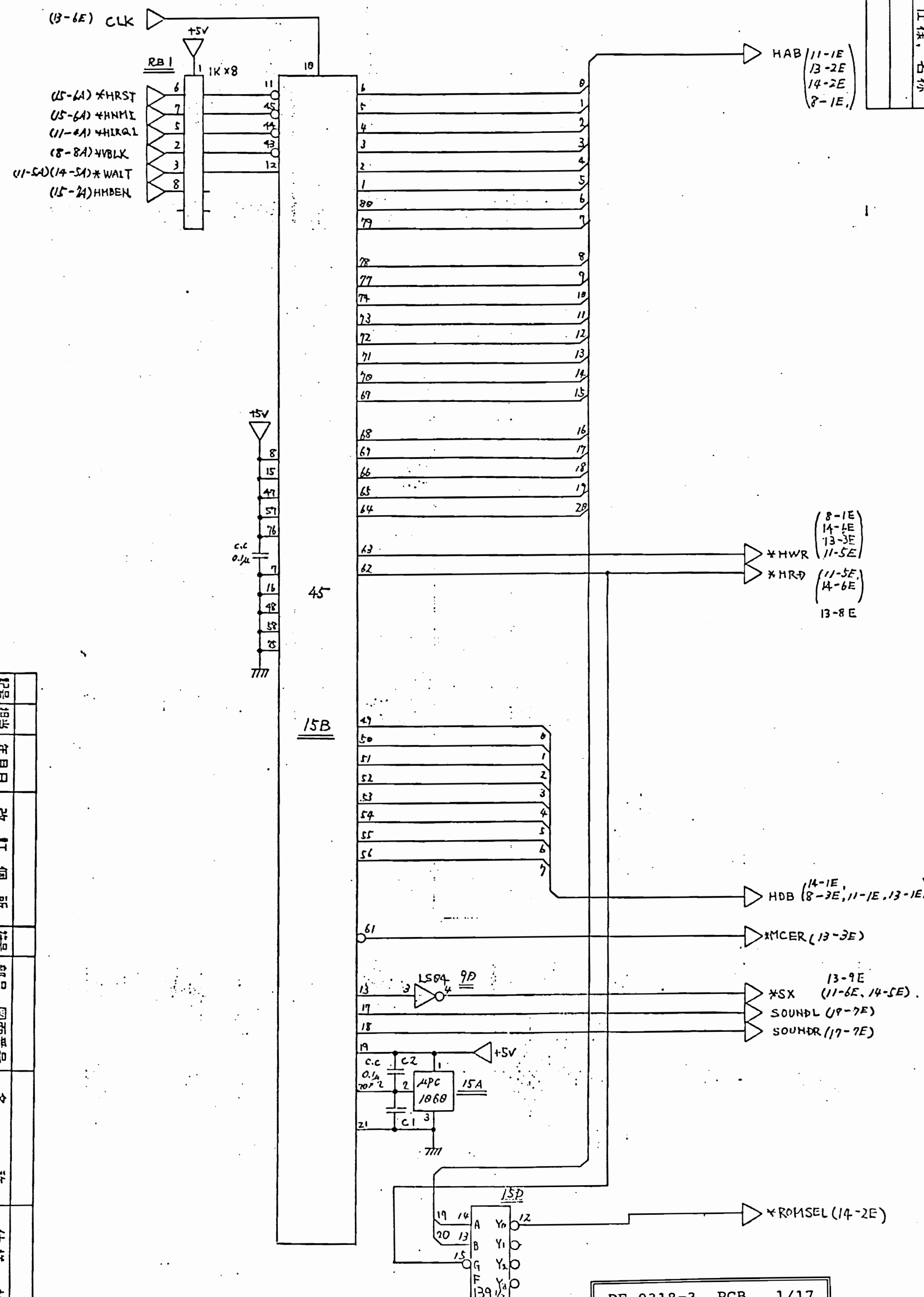
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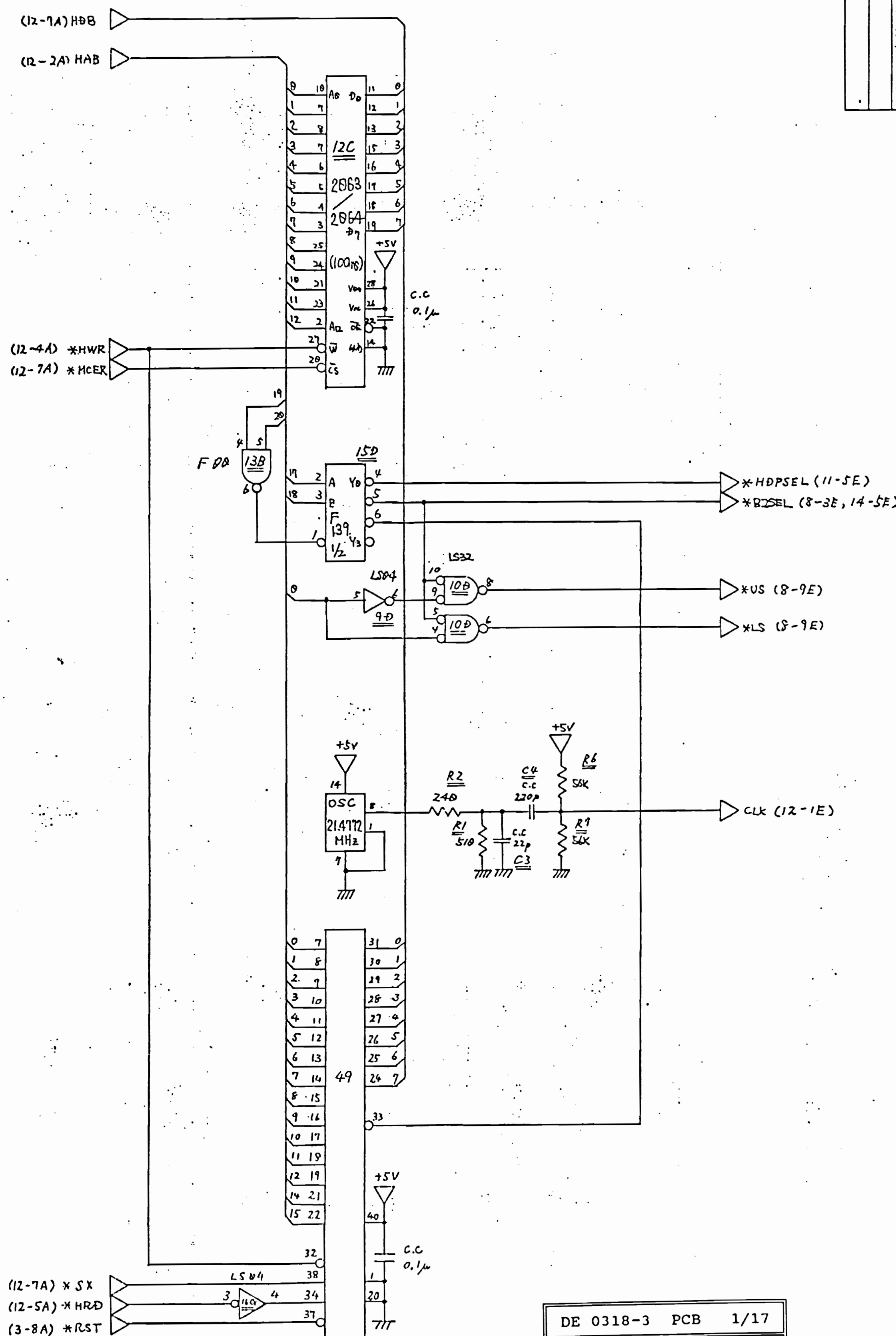
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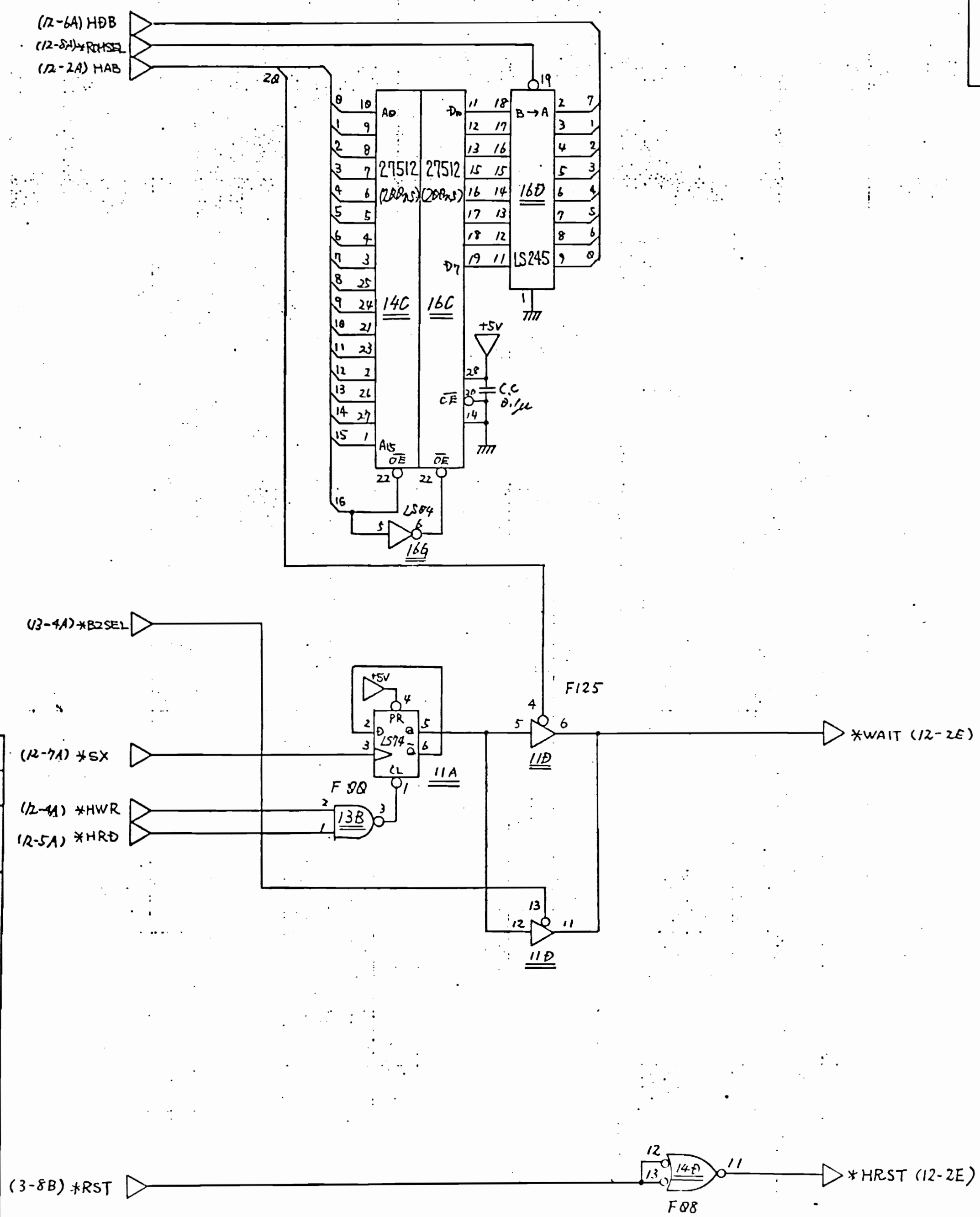


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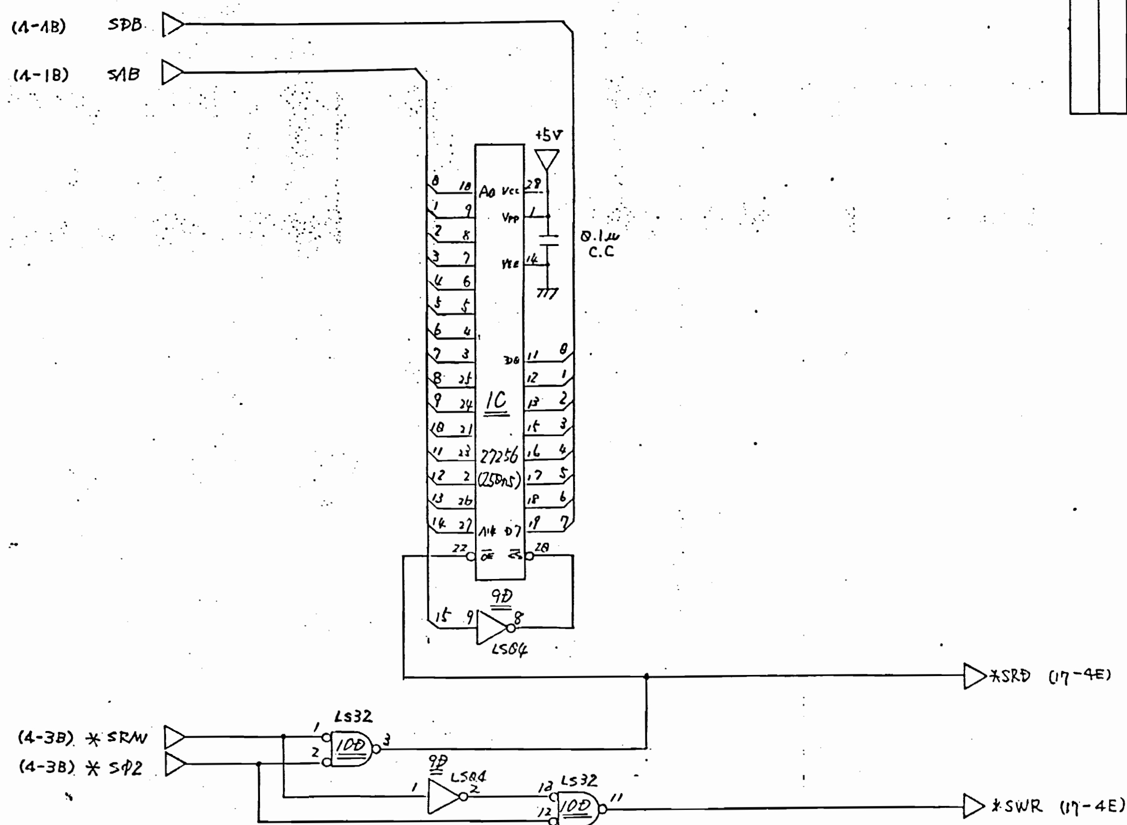
記号 | 担当 | 年月日 | 改 訂 個 所

符号 | 部品, 図面番号 | 名 称 | 仕様, 材質

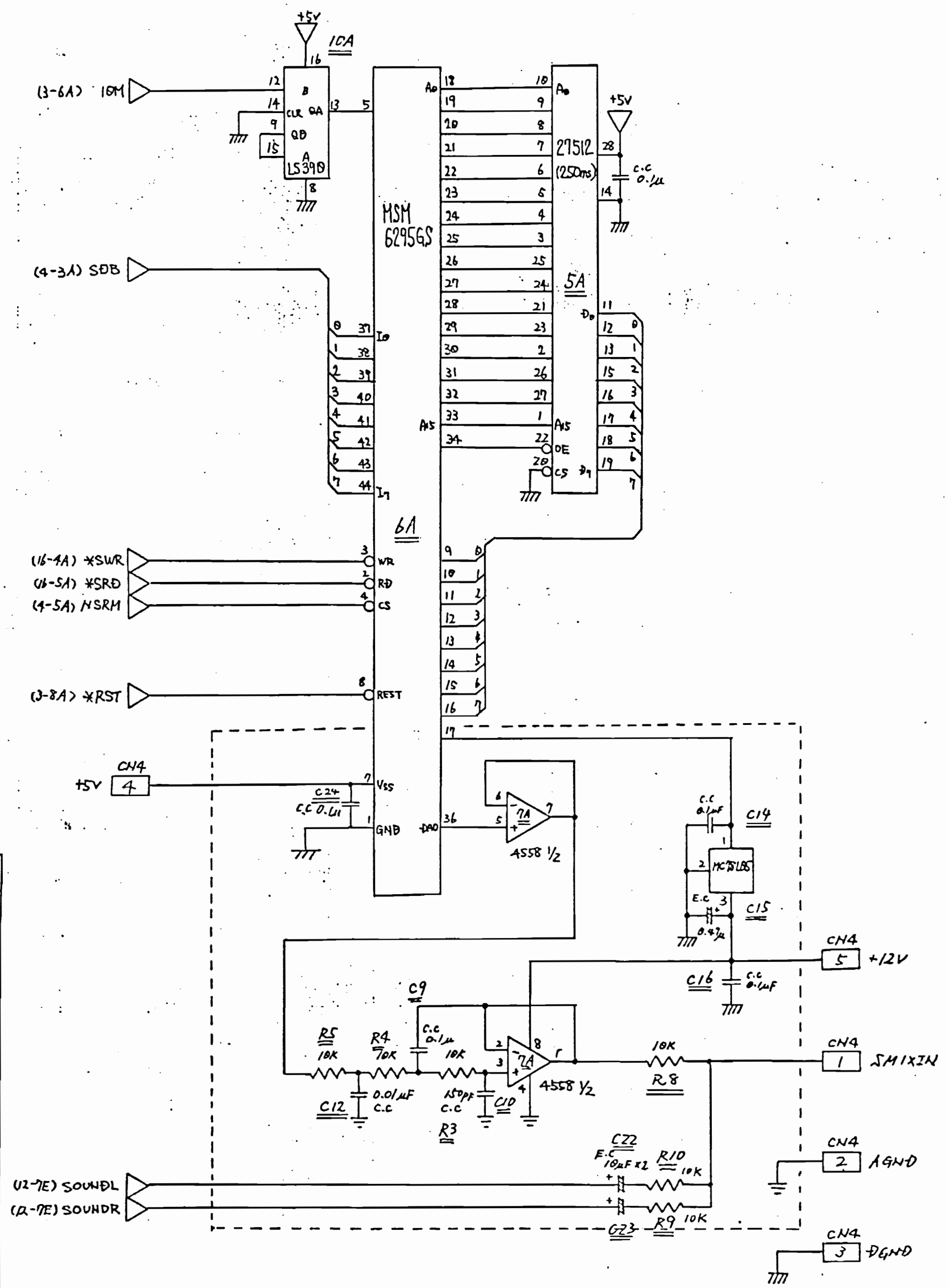
DE 0318-3 PCB 1/17



DE 0318-3	PCB	1/17
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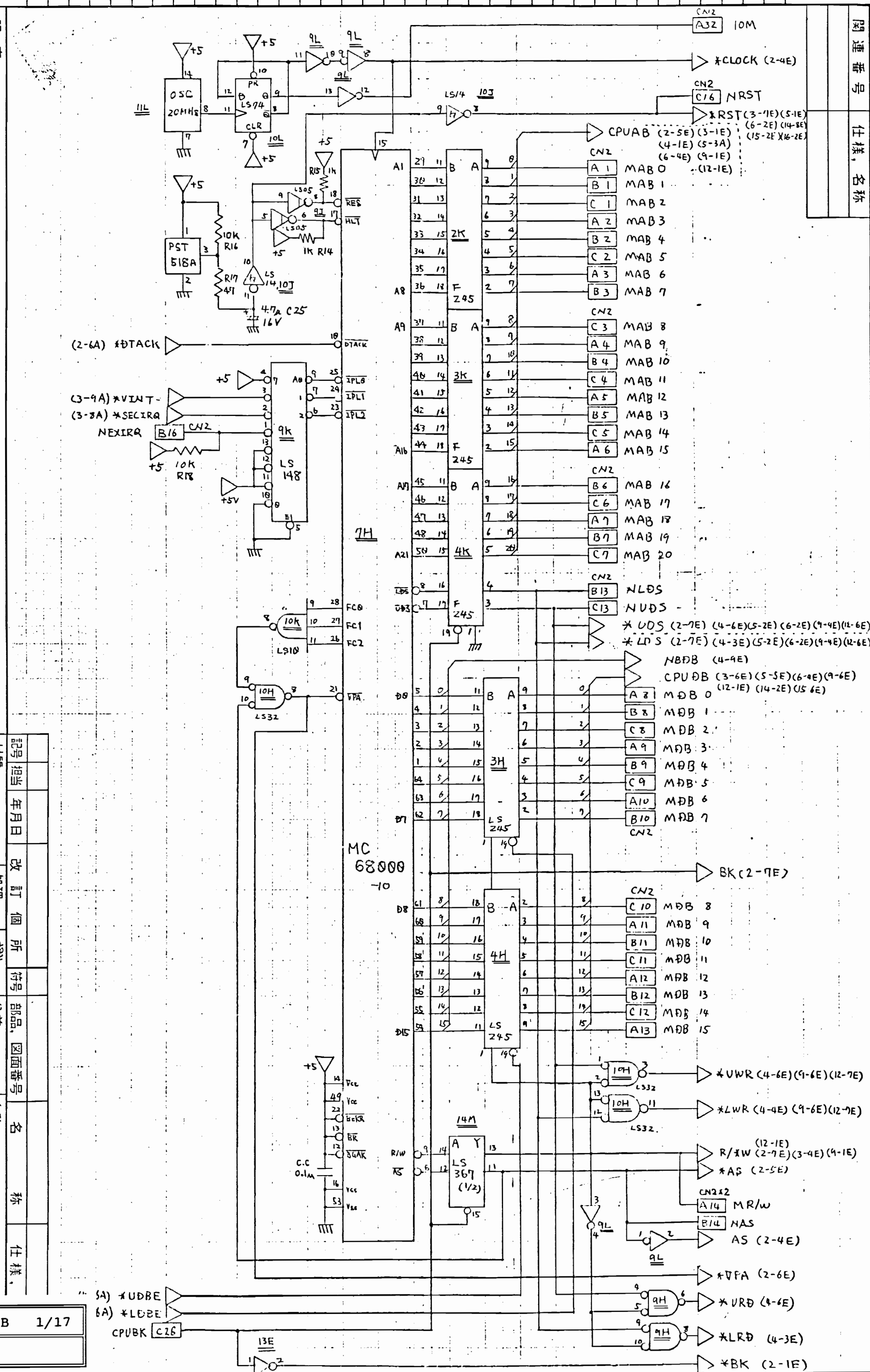


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第3角法

記号	担当	年月日	改訂個所	符号	部品、図面番号	名称	仕様

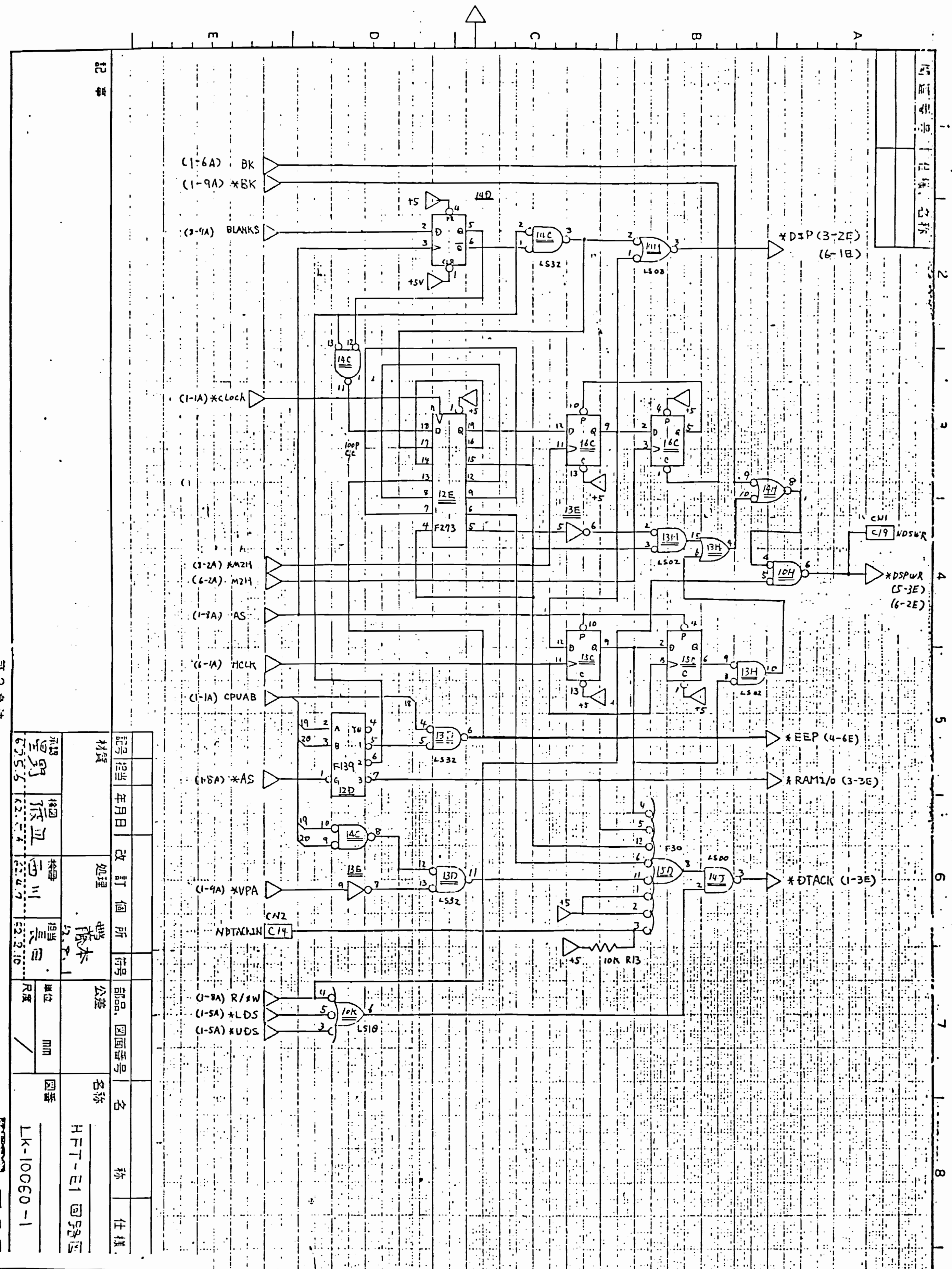
材質 / 処理 / 公差

単位 mm　尺度 /

名称 HFT-E1 回路図

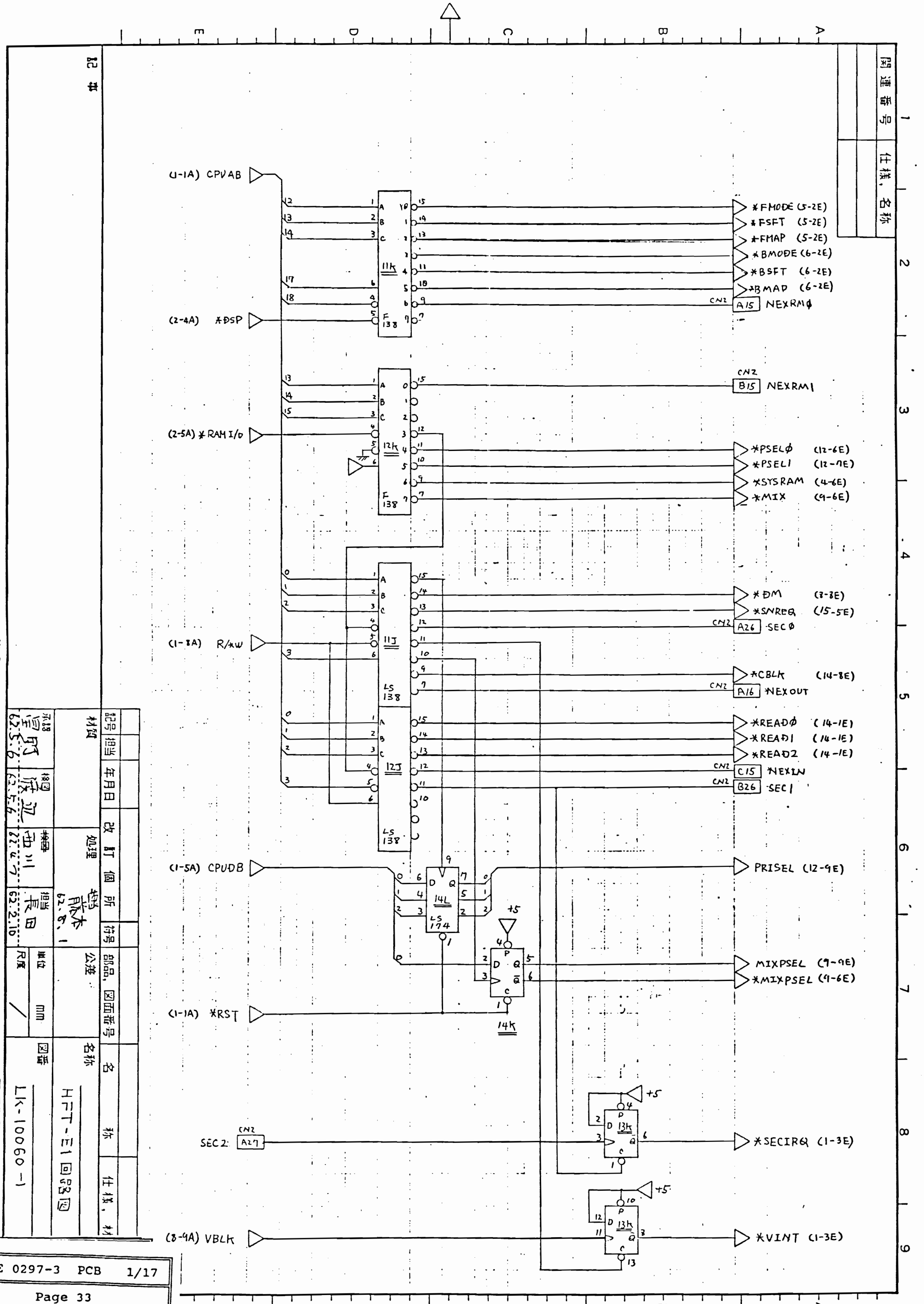
図番 LK-10060-1

データイースト



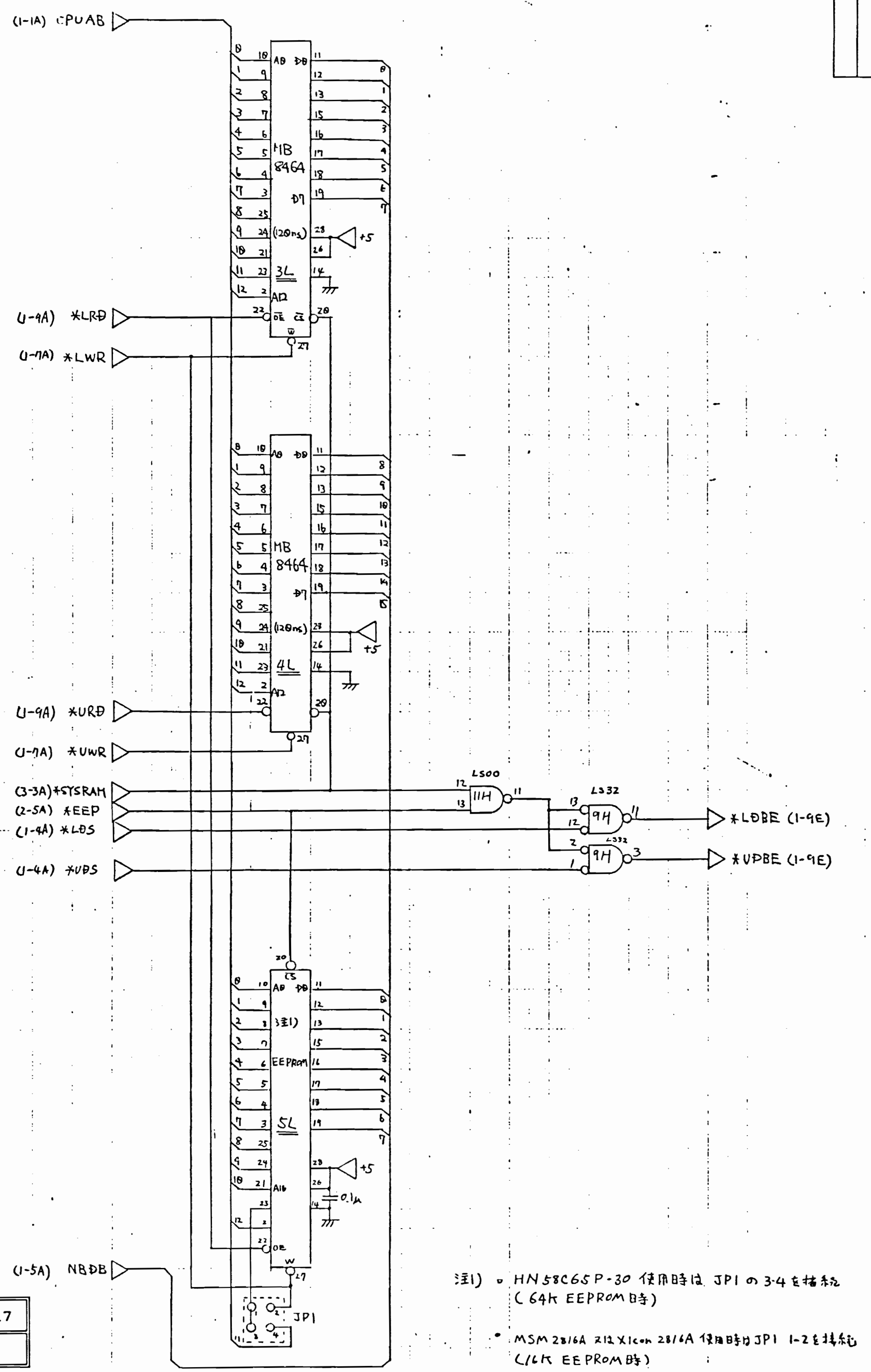
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関連番号 | 仕様、名称

記事

第3角法

記号	担当	年月日	改訂個所
材質			
処理			
公差			

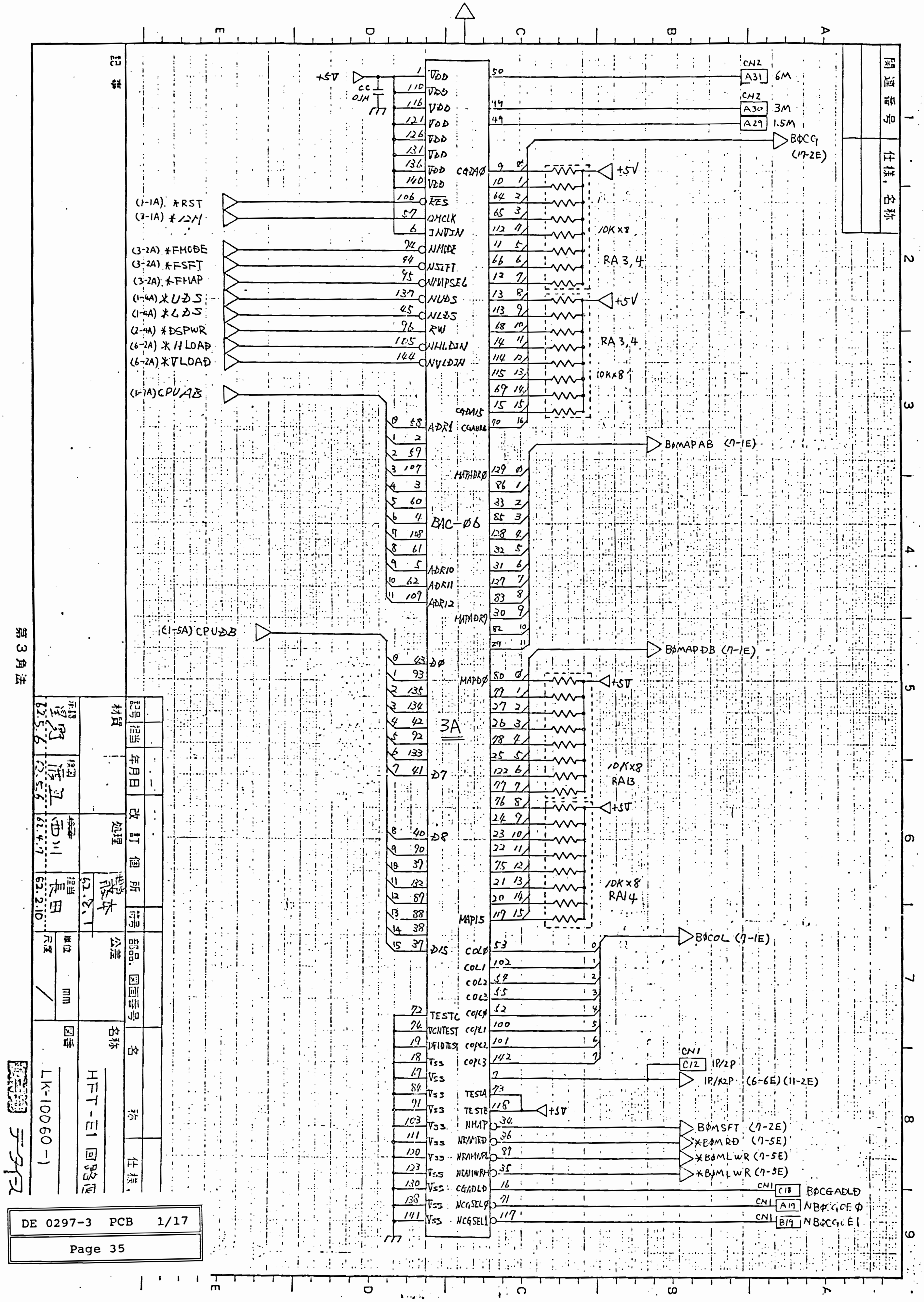
名称: HFT-E1 回路図

図番: LK-10060-1

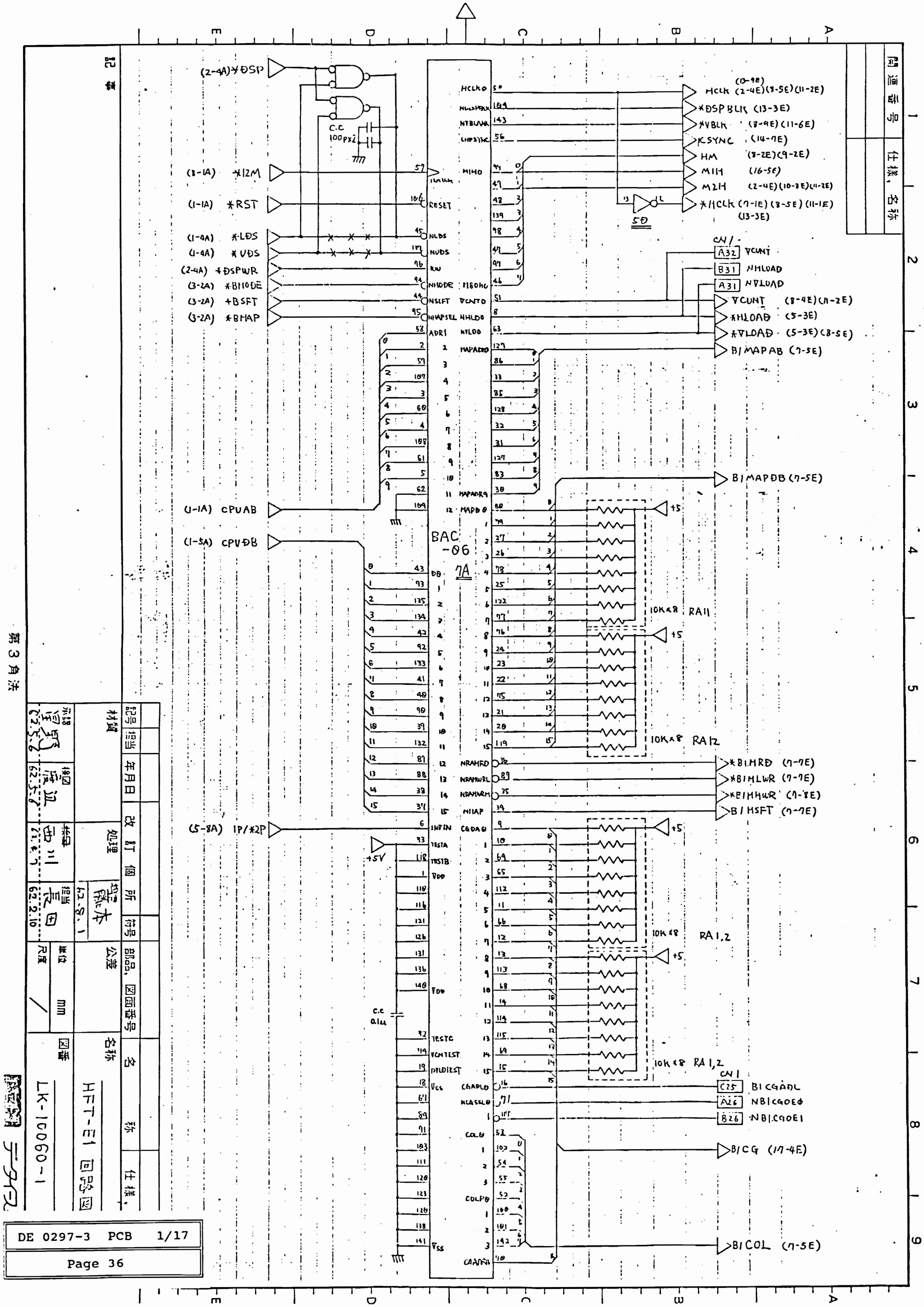
単位 mm

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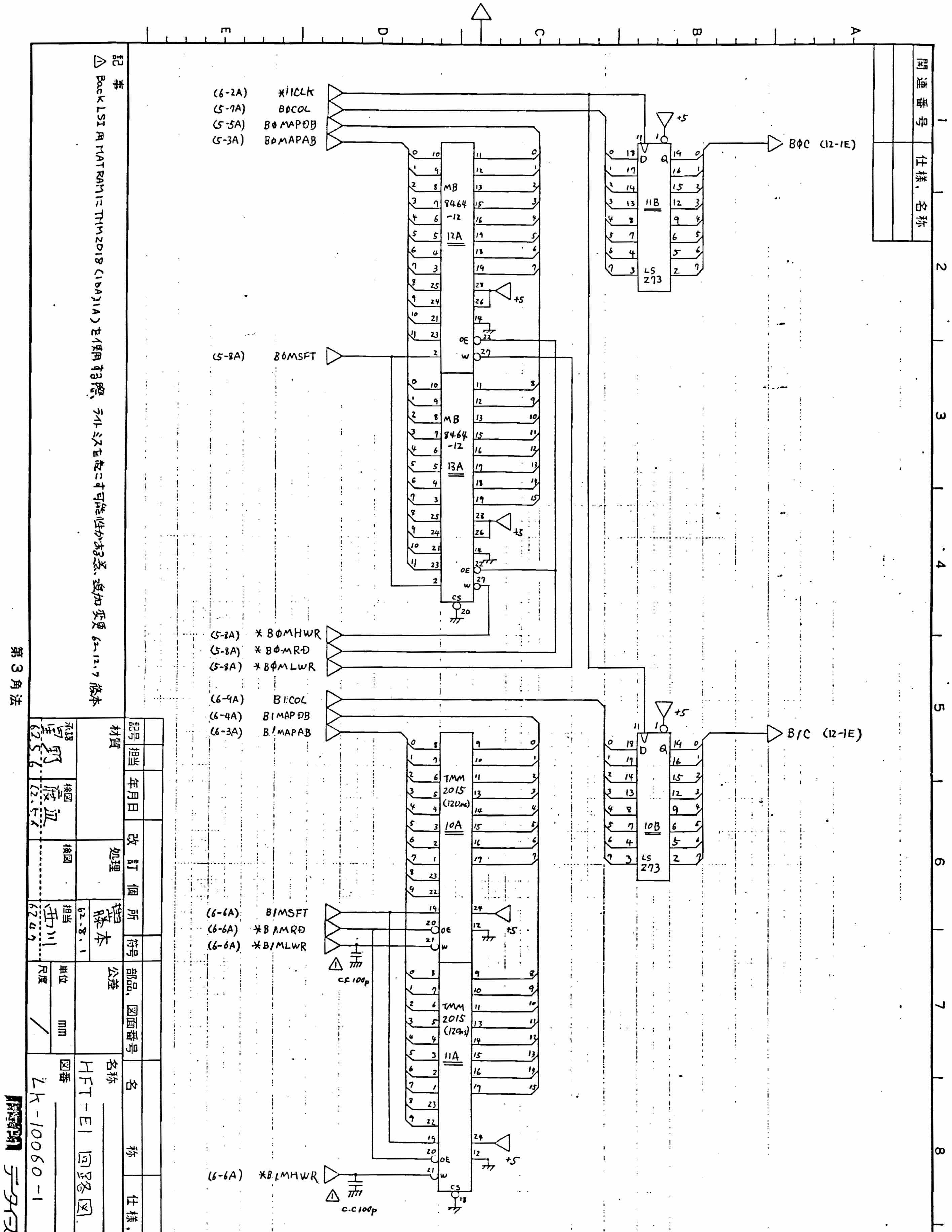
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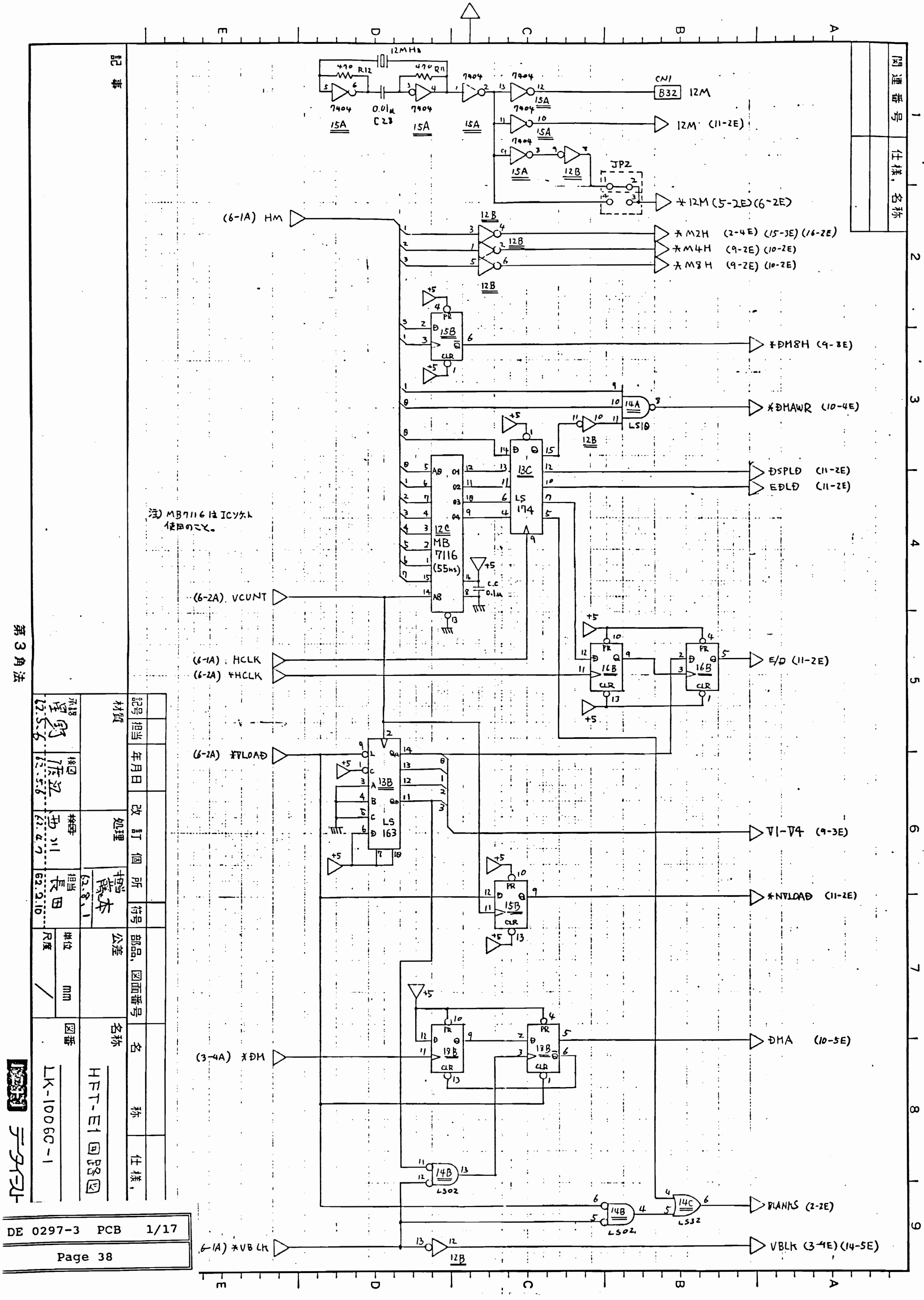


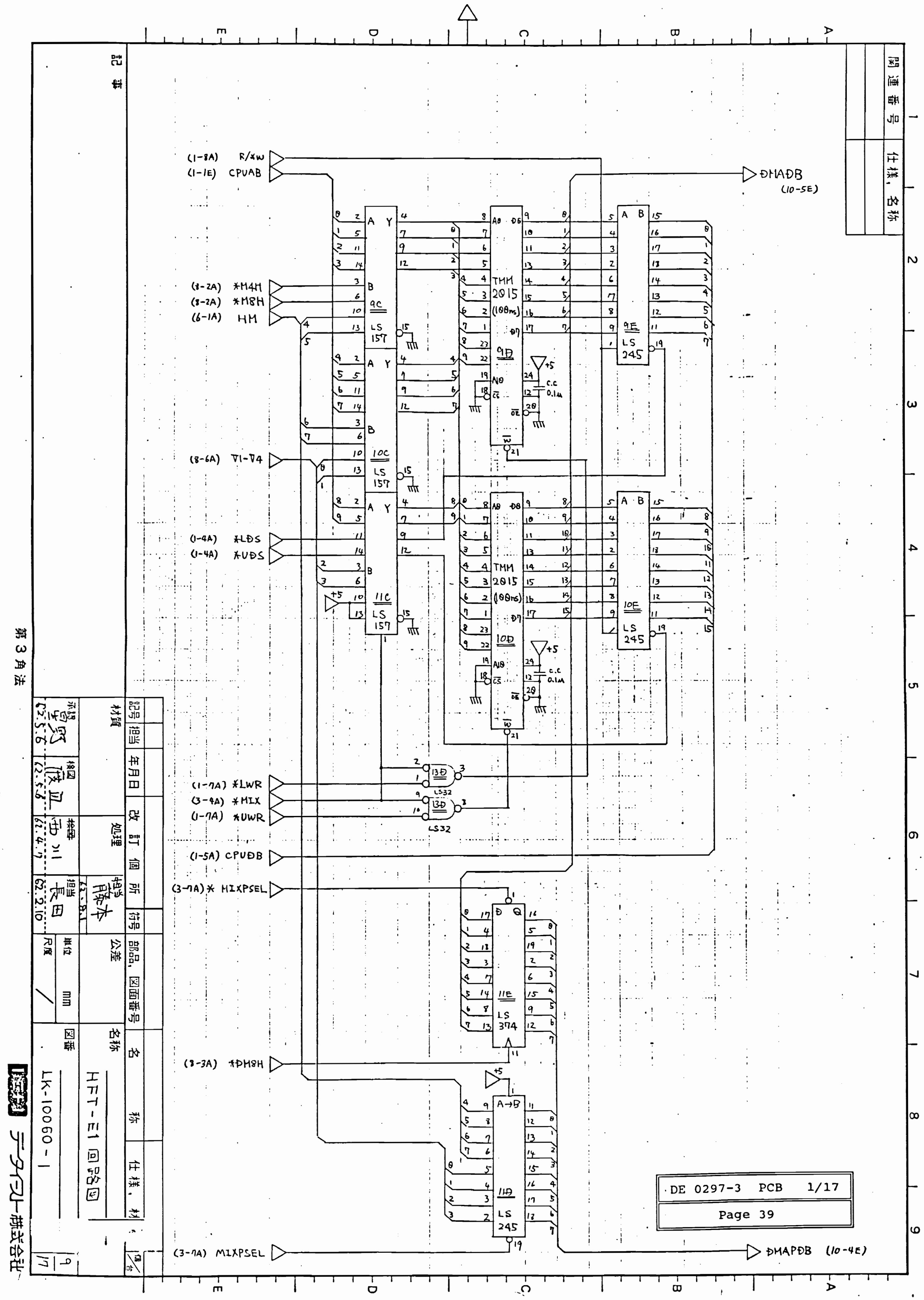
DE 0297-3 PCB 1/17



DE 0297-3 PCB 1/17

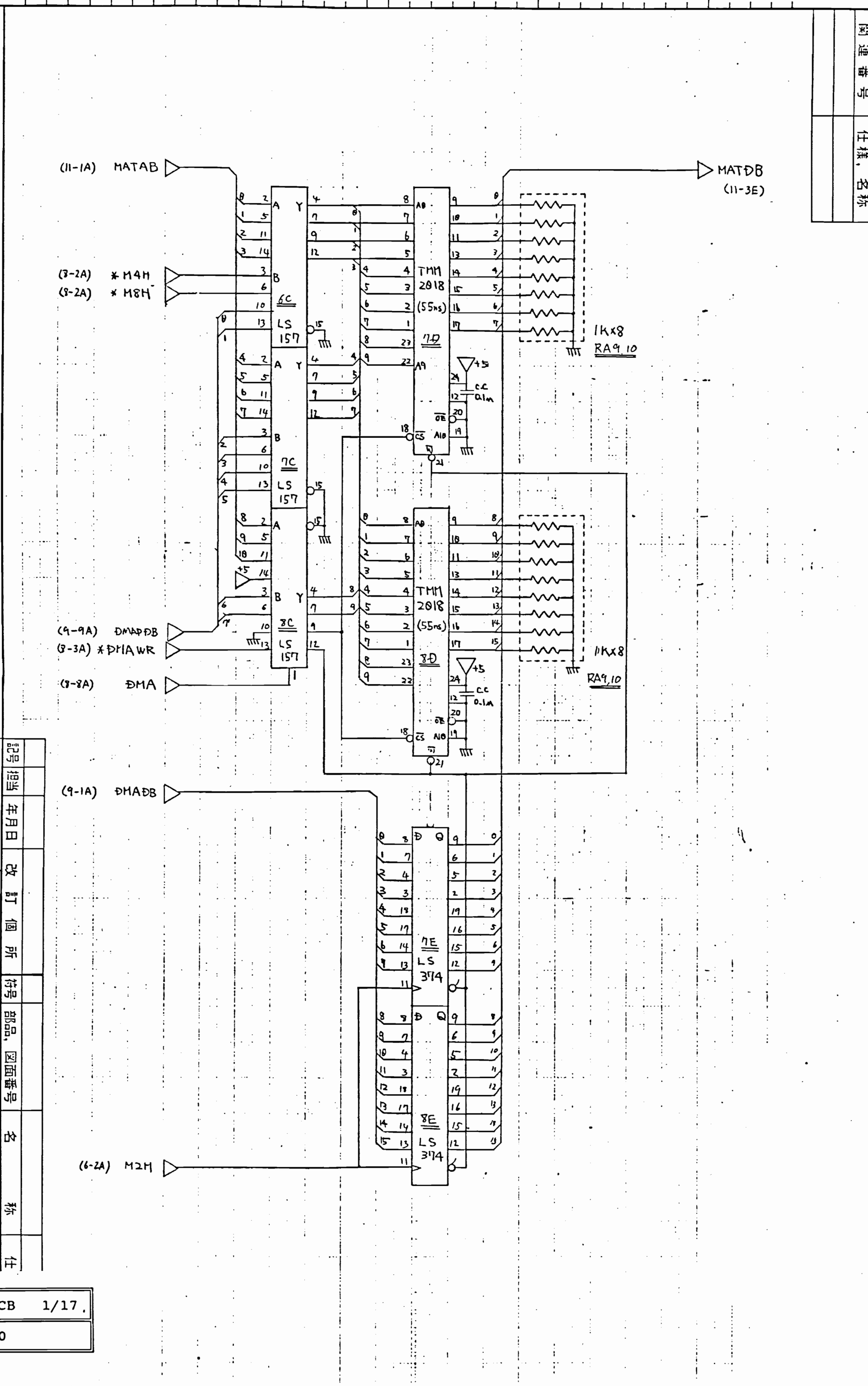
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12MHz
12M
12M (11-2E)
JP2
*12M (5-2E)(6-2E)
(6-1A) HM
*M2H (2-4E) (15-3E) (16-2E)
*M4H (9-2E) (10-2E)
*M8H (9-2E) (10-2E)
*DM8H (9-3E)
*DMAWR (10-4E)
DSPLD (11-2E)
EDLD (11-2E)
注) MB7116はICソケット使用のこと。
MB 7116 (55ns)
LS 174
(6-2A) VCUNT
(6-1A) HCLK
(6-2A) *HCLK
E/D (11-2E)
(6-2A) *VLOAD
LS 163
V1-V4 (9-3E)
*NVLOAD (11-2E)
(3-4A) *DM
DMA (10-5E)
BLANKS (2-2E)
(6-1A) *VBLK
VBLK (3-4E)(14-5E)
第3角法
HFT-E1 回路図
LK-1006C-1
データイースト



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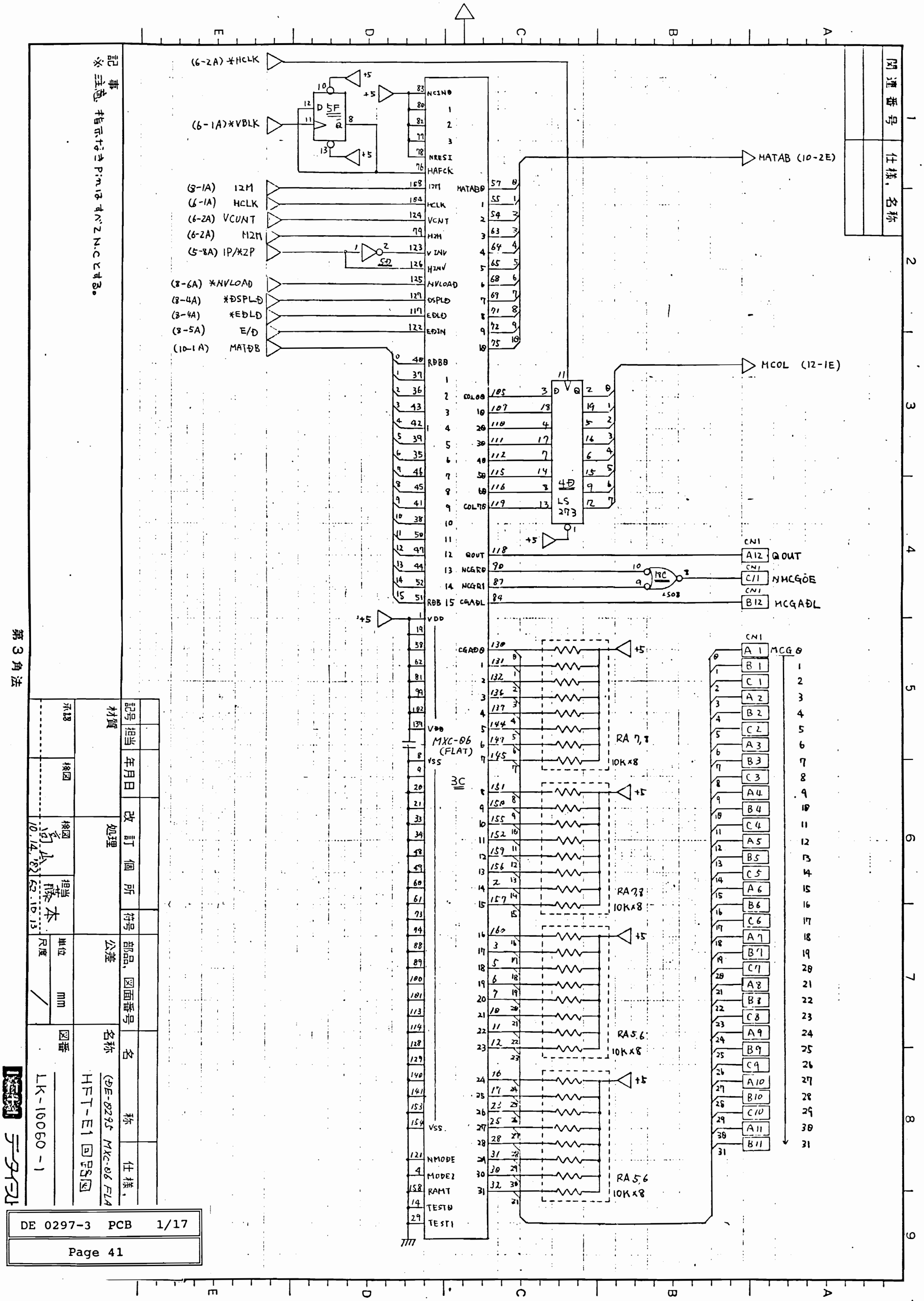


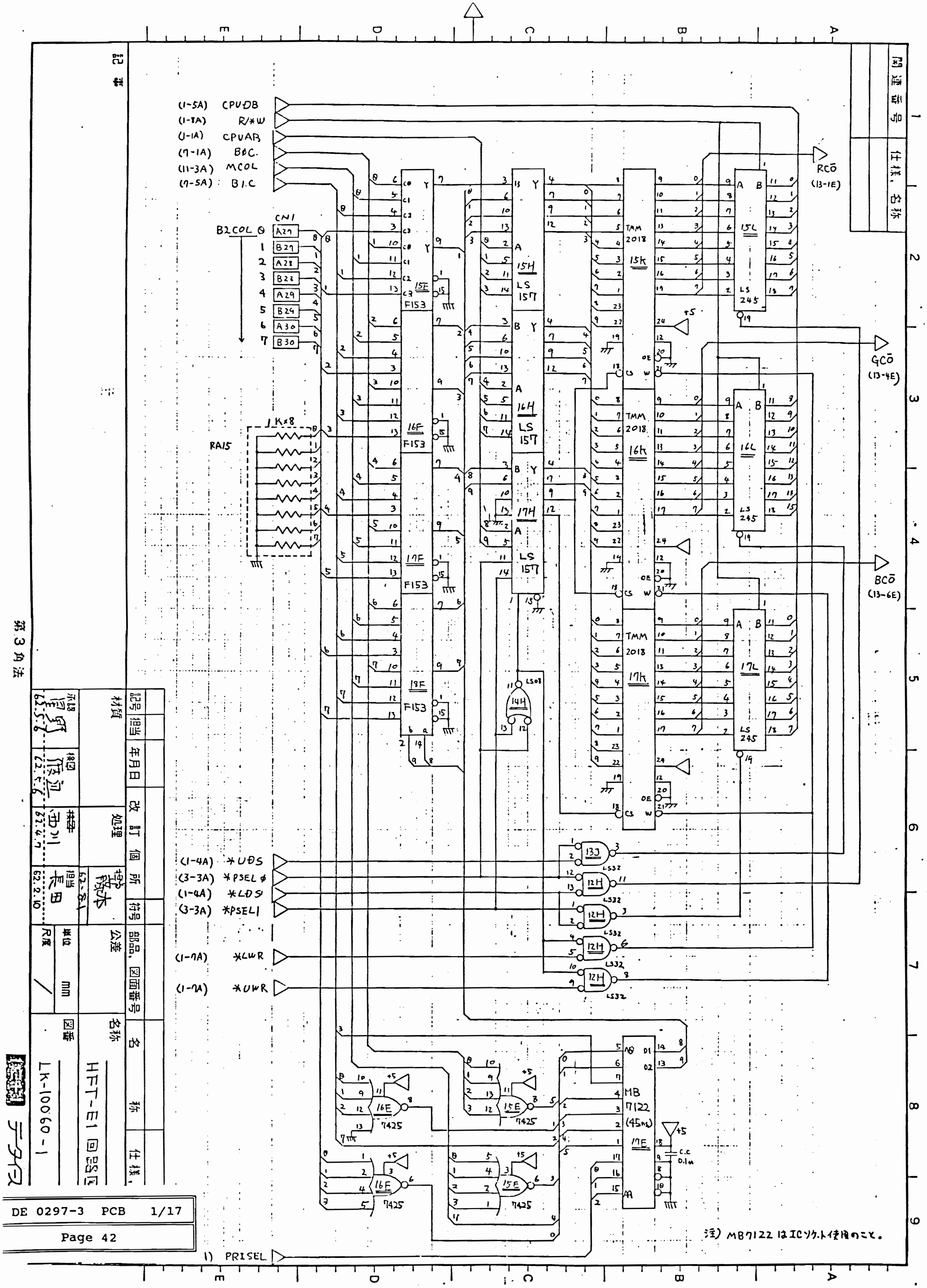
HFT-E1 回路

LK-10060 -1

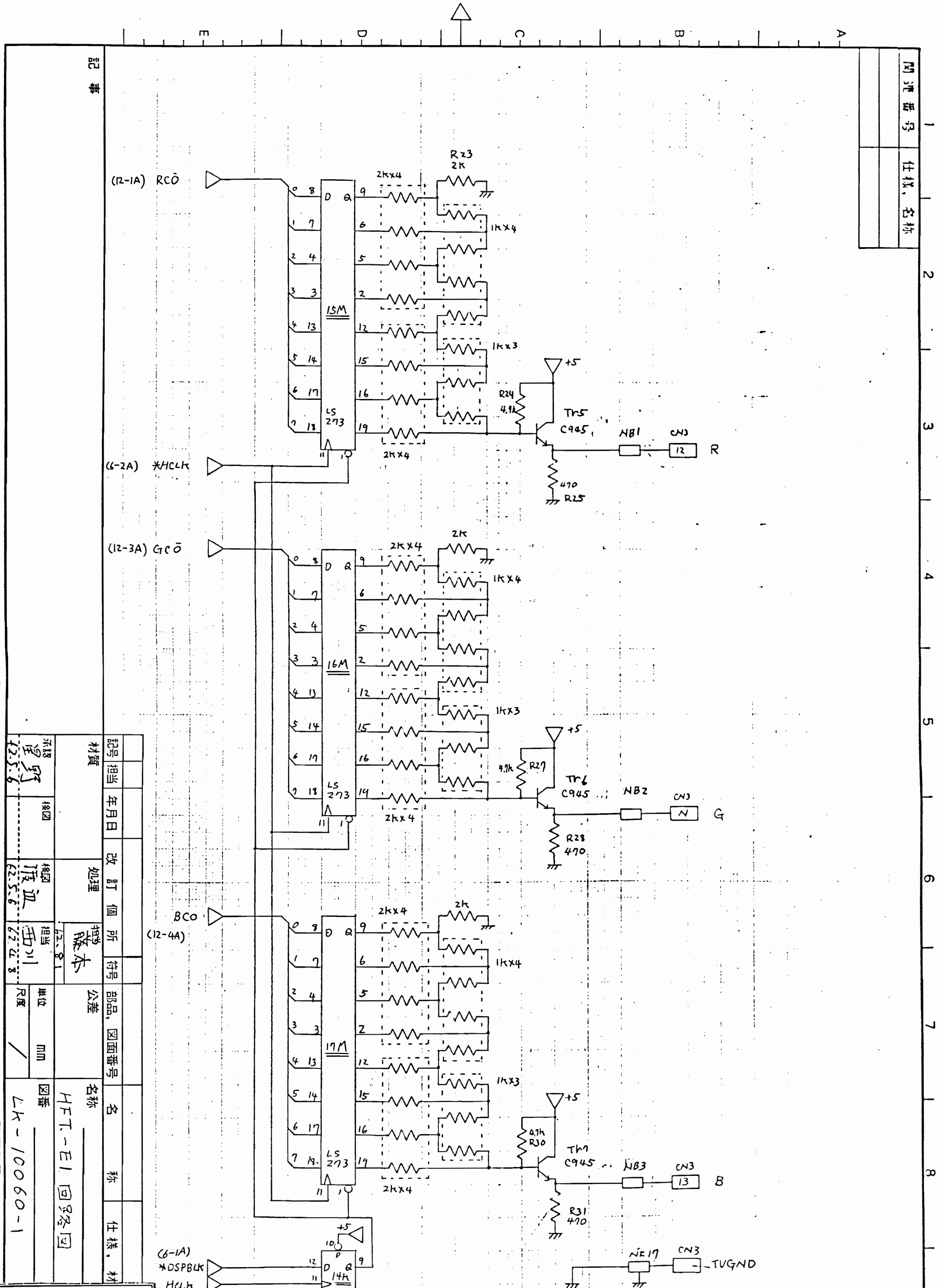
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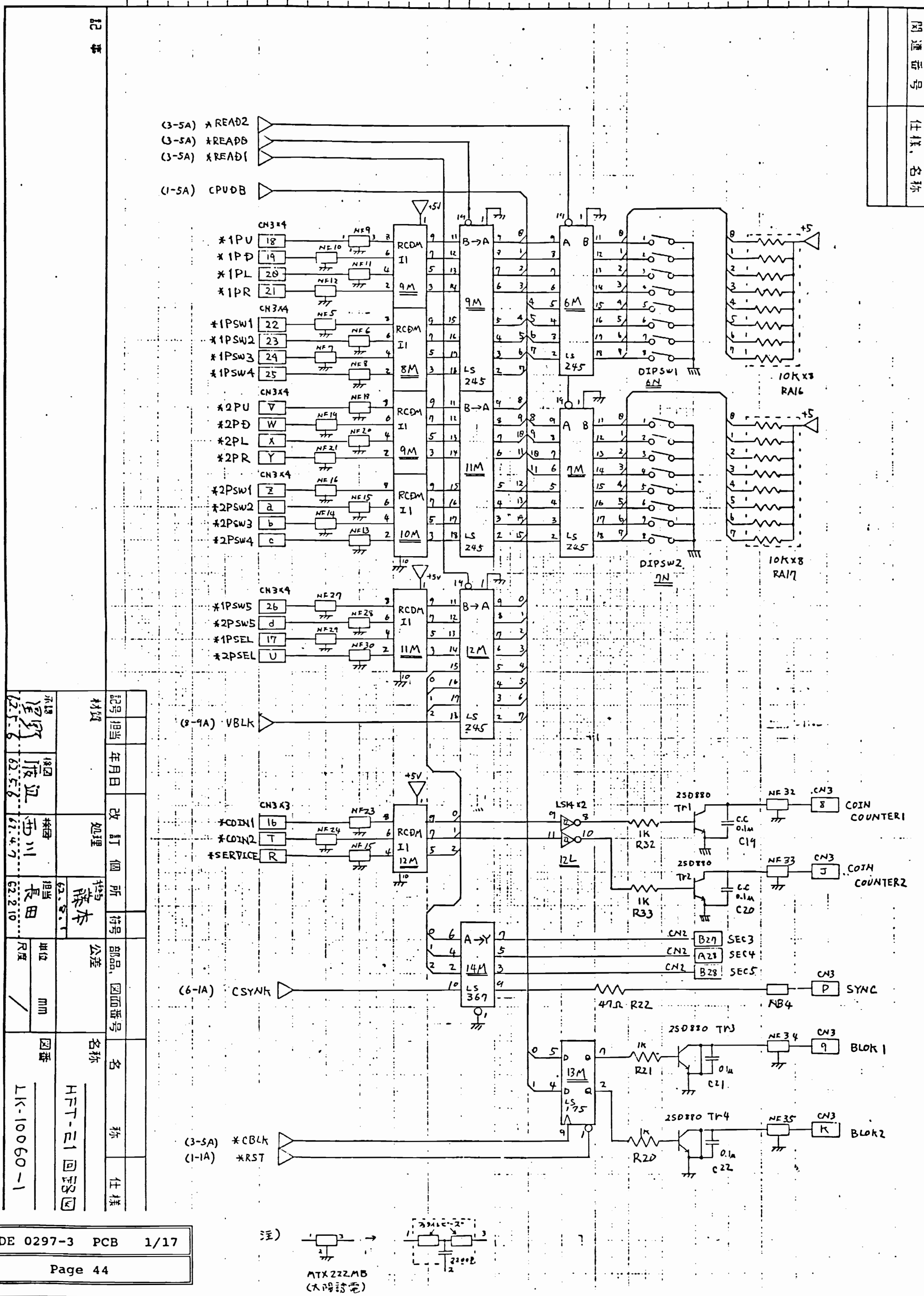

(6-2A) *HCLK
(6-1A) *VBLK
D 5F
(8-1A) 12M
(6-1A) HCLK
(6-2A) VCUNT
(6-2A) H2H
(5-8A) IP/*2P
(8-6A) *NVLOAD
(8-4A) *DSPLD
(8-4A) *EDLD
(8-5A) E/D
(10-1A) MATDB
MATAB (10-2E)
MCOL (12-1E)
4D
LS 273
CN1
A12 QOUT
C11 NMCGOE
B12 MCGADL
MCG 0
MXC-06 (FLAT)
3C
RA 7,8 10K×8
RA 5,6 10K×8
+5
MATAB0
COL00
COL76
QOUT
NCGR0
NCGR1
CGADL
CGAD0
VDD
VSS
NMODE
MODE2
RAMT
TEST0
TEST1
RDB0
RDB 15
NCINO
NRESI
HAFCK
※注意 指示なきPinはすべてN.C.とする。
第3角法
HFT-E1 回路図
(DE-0297 MXC-06 FLA
LK-10060-1
データイースト

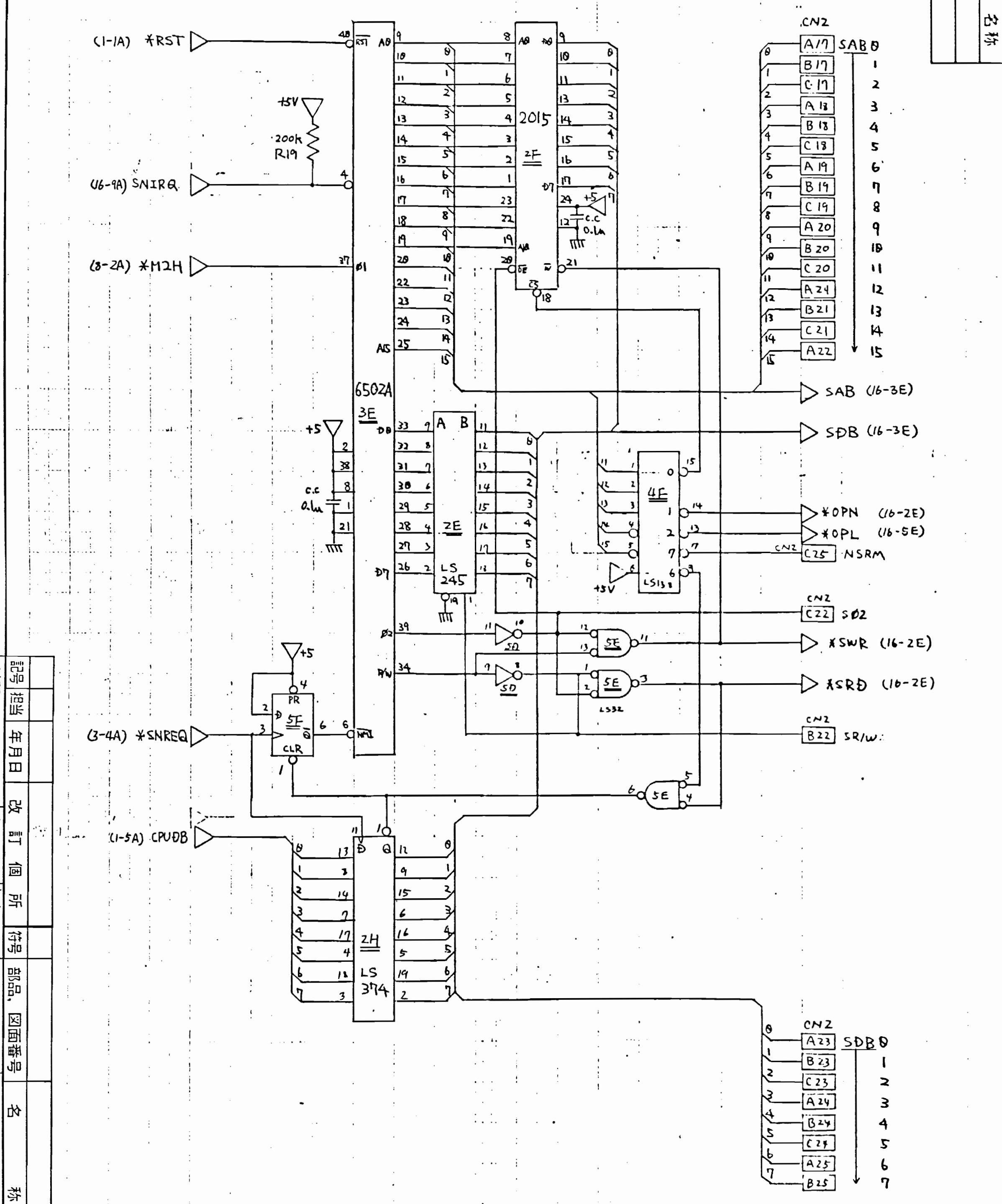


DE 0297-3 PCB 1/17

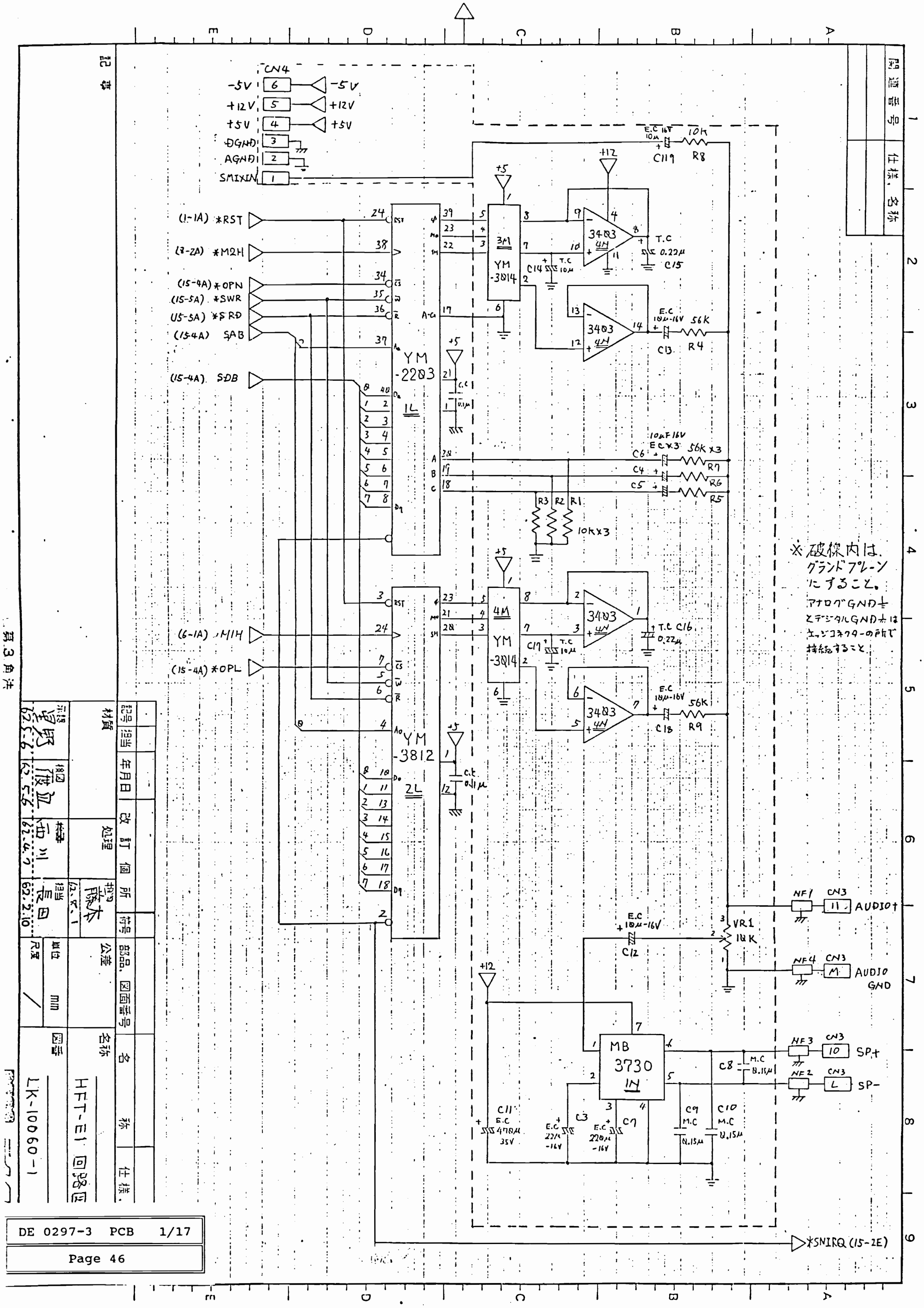


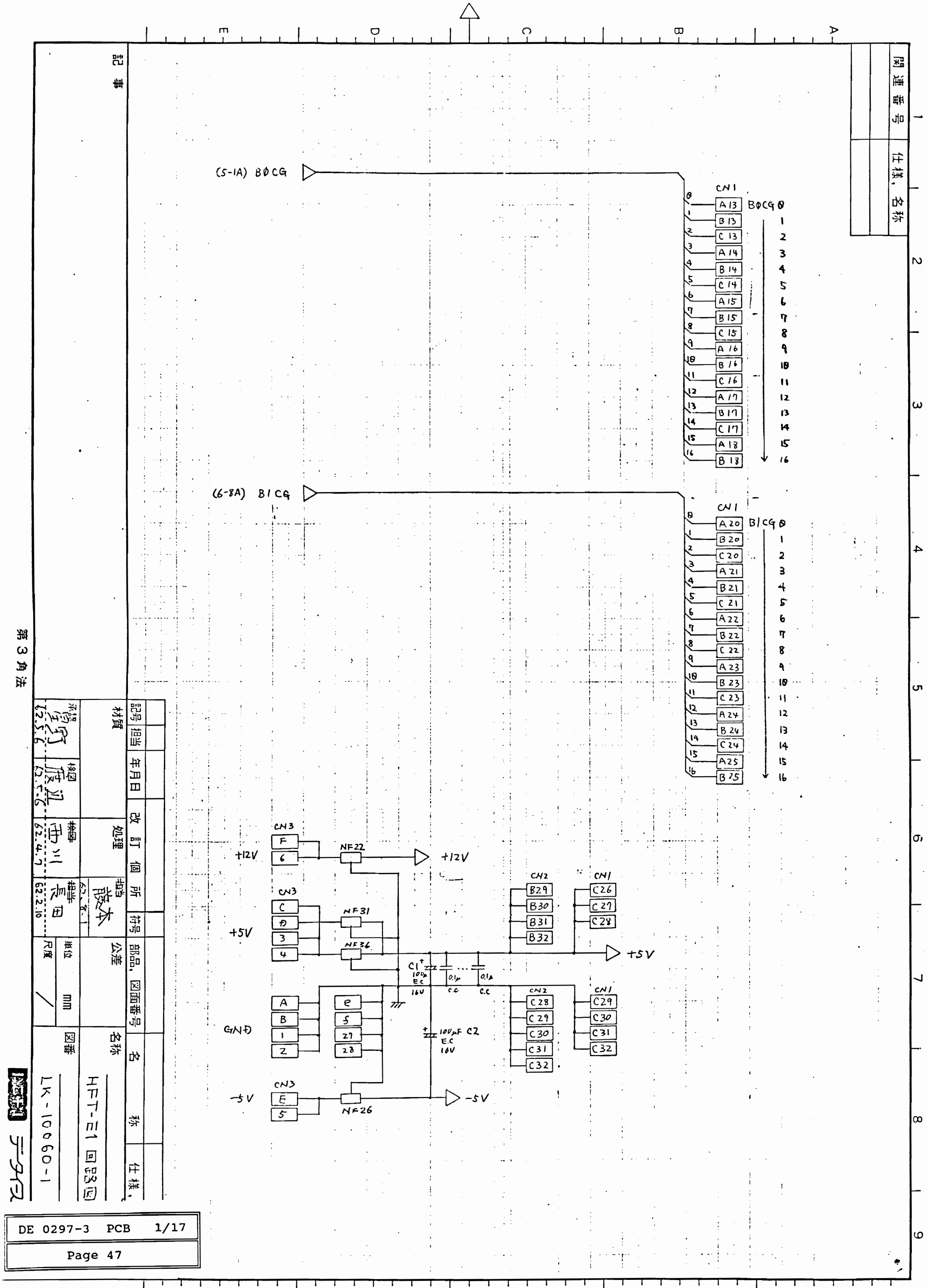
(12-1A) RCŌ
(6-2A) *HCLK
(12-3A) GCŌ
BCO (12-4A)
(6-1A) *DSPBLK
HCLK
15M LS273
16M LS273
17M LS273
14K LS74
R23 2K
2Kx4
1Kx4
1Kx3
R24 4.7K
Tr5 C945
R25 470
NB1
CN3 12 R
R27 4.7K
Tr6 C945
R28 470
NB2
CN3 N G
R30 4.7K
Tr7 C945
R31 470
NB3
CN3 13 B
NF17 CN3 TVGND
注) NFxx は MTX222MB (大陽誘電)
+5
記事
関連番号
仕様、名称
第3角法
記号 担当 年月日 改訂個所 符号 部品、図面番号 名称 仕様、材
材質
処理
公差
単位 mm
尺度
名称 HFT-E1 回路図
図番 LK-10060-1
データイースト


(3-5A) *READ2
(3-5A) *READB
(3-5A) *READ1
(1-5A) CPUDB
*1PU
*1PD
*1PL
*1PR
*1PSW1
*1PSW2
*1PSW3
*1PSW4
*2PU
*2PD
*2PL
*2PR
*2PSW1
*2PSW2
*2PSW3
*2PSW4
*1PSW5
*2PSW5
*1PSEL
*2PSEL
(8-9A) VBLK
*COIN1
*COIN2
*SERVICE
(6-1A) CSYNC
(3-5A) *CBLK
(1-1A) *RST
RCDM I1 9M
RCDM I1 8M
RCDM I1 10M
RCDM I1 11M
RCDM I1 12M
B→A 9M LS245
B→A 11M LS245
B→A 12M LS245
A B 6M LS245
A B 7M LS245
DIPSW1 6N
DIPSW2 7N
10Kx8 RA16
10Kx8 RA17
LS14 x2 12L
2SD880 TR1
2SD880 TR2
2SD880 TR3
2SD880 TR4
COIN COUNTER1
COIN COUNTER2
SEC3
SEC4
SEC5
SYNC
BLOK1
BLOK2
A→Y 14M LS367
13M LS175
47Ω R22
MTX222MB
HFT-E1 回路図
LK-10060-1



注) 6502Aは. CN2の近くに配置すること.


CN4
-5V
+12V
+5V
DGND
AGND
SMIXIN
(1-1A) *RST
(3-2A) *M2H
(15-4A) *OPN
(15-5A) *SWR
(15-5A) *SRD
(15-4A) SAB
(15-4A) SDB
YM
-2203
1L
YM
-3014
3M
3403
4H
T.C
0.22μ
C15
C14
E.C 16V 10μ
C119
10K
R8
E.C 10μ-16V
56K
C13
R4
10μF 16V
E.C×3
56K×3
C6
C4
C5
R7
R6
R5
R3
R2
R1
10K×3
(6-1A) *M1H
(15-4A) *OPL
YM
-3812
2L
4M
C17
T.C C16
0.22μ
C18
R9
※破線内は、グランドプレーンにすること。
アナログGND とデジタルGND は エッジコネクターの所で接続すること。
NF1
CN3
AUDIO+
VR1
10K
C12
NF4
AUDIO GND
MB
3730
1H
C8
M.C
0.15μ
NF3
SP+
NF2
SP-
C11
E.C
470μ
35V
C3
E.C
220μ
-16V
C7
C9
M.C
0.15μ
C10
*SNIRQ (15-2E)
関連番号
仕様、名称
記事
材質
処理
公差
R.S.
単位
mm
図番
LK-10060-1
名称
HFT-E1 回路図
第3角法



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5. 0. CUSTOMER RESPONSE

This HIPPODROME™ Installation and Service Manual includes schematic diagrams, and should answer almost all of the technical questions that you may have. Should you require additional, or more detailed information, you should contact the DATA EAST distributor from whom you have purchased the game. His highly qualified staff will, most likely, be able to answer your questions, or give you the proper direction. If, after consulting with your distributor, you still require additional assistance, you may contact the DATA EAST service department at (408) 286-7080, between the hours of 8:00 AM and 5:00 PM Pacific time. When contacting your distributor, or when contacting DATA EAST, please be prepared to provide the serial numbers for the game pcb (printed on the original product seal), the "AAMA PROTECT" sticker, and the game cabinet.

DATA EAST welcomes all constructive feedback, both negative and positive. We would be pleased if you would write us directly with you comments concerning our products and services. Our address is:

Data East USA, Inc.
470 Needles Drive
San Jose, CA 95112
Attn: Customer Service Dept.

Be sure to indicate whether you wish to have your name added to our mailing list for service bulletins and product updates. The form below is provided for your convenience

HIPPODROME™ CUSTOMER RESPONSE

COMPANY NAME:________________________________

ADDRESS:____________________________________

CITY:____________________STATE:_______ZIP:_____________

TELEPHONE:____

YOUR NAME:______________________TITLE:_________________

GAME CABINET SERIAL NUMBER________________________________

PCB SERIAL NUMBER__________________AAMA #_______________
(from Original Product Seal)
ADD YOUR COMPANY TO OUR DIRECT MAIL LIST? (circle one) YES NO

COMMENTS:____

____

____

____

WARRANTY INFORMATION

Data East USA, Inc., ("Seller"), warrants only to the original purchaser ("Buyer"), of its products that the items listed below are free from defects in material and workmanship under normal use and service for the period specified:

GAME LOGIC PRINTED CIRCUIT BOARD(S)	**90 DAYS**

No other parts of the Seller's products are warranted.

Warranty periods are effective from date of initial shipment from Seller to Buyer. Seller's sole liability shall be, at its option, to repair or replace products which are returned to Seller during the warranty periods specified, provided:

1. Seller is notified promptly upon discovery by buyer that stated products are defective.
2. Such products are properly packaged and then returned freight pre-paid, to a place specified by Seller.

This warranty does not apply to products damaged during shipment and/or due to improper handling, or due to improper installation or usage, or alteration. In no event shall Seller be liable for any anticipated profits, loss of profits, loss of use, accidental or consequential damages, or any other losses incurred by the customer in connection with the purchase of a Data East USA, Inc., product.

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